SKIOLD

USER MANUAL

SKIOLD MAKES A DIFFERENCE!

DM6000

981 003 065
Ver. 2.53
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1. Introduction

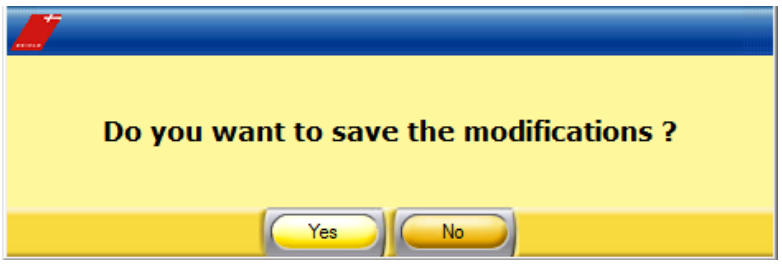
This document includes a brief guide on how to operate a DM6000 unit.

At the top of each window for all the illustrations shown is a print symbol which allows you to print the information shown either on a printer or as a PDF document which you can send by e-mail.

There is also a for all windows. Clicking on this calls up a document which describes the window in question, including any windows not described in this brief manual.
Most of these online help pages can be printed out.

If you click on this before saving, the old values are restored in the current window. This can be used if you think you have input something incorrectly. If you have saved your data, you will not be able to click on this.

When you have edited data in any of the windows, you have to save the information by clicking on this symbol . If you forget to do this and want to leave the screen, the following message will be displayed



There are additional buttons for some screens, such as curve and recipe.

Insert row and delete row

Copy all window content and insert this are used if you want to create an almost identical graph or recipe

If you want to copy a single word and insert it, use these two symbols

If you want to copy a single complete row and insert it elsewhere, select

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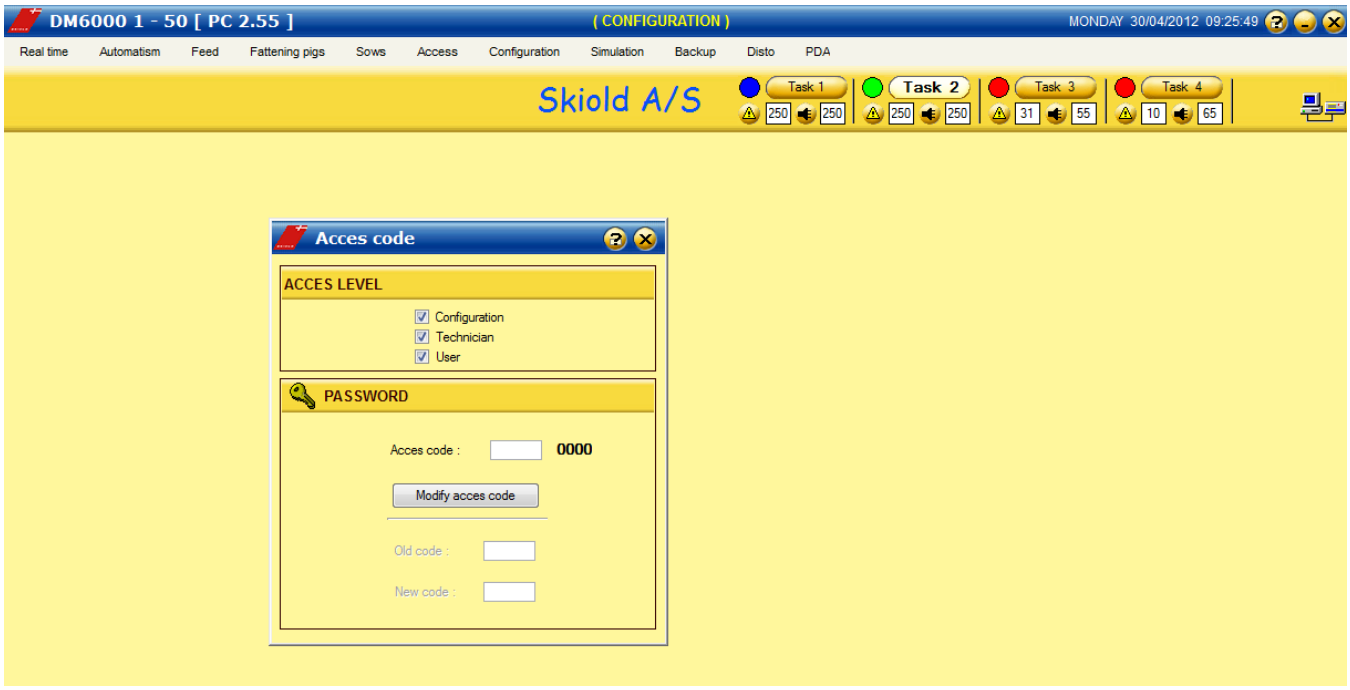
1.1 Access to and amendment of user code

This guide is made up of descriptions in bullet form, indicating what you have to input and where in order to create the most common user inputs in the system.



To be able to operate the system, you first have to log on to the system as a user.

To log on as a user of the DM6000 controller, proceed as follows:

1. Select "Access" in the main menu and go into the "Access code" window.

2. The first time you log on, you have to input the password "0000" (four zeroes) in the "Access code" field. After this, you can edit your access code by clicking on the "Modify access code" button, and inputting the old access code in the "Old code" field and the new one in the "New code" field. The access code is then changed to the new one. (Remember to make a note of the code.)

3. When you then want to log on, you have to input the new password in the "Access code" field.

When you have logged on correctly as a user, the word "USER" appears in the centre of the title bar for the DM6000 PC program (the top blue row in the window).

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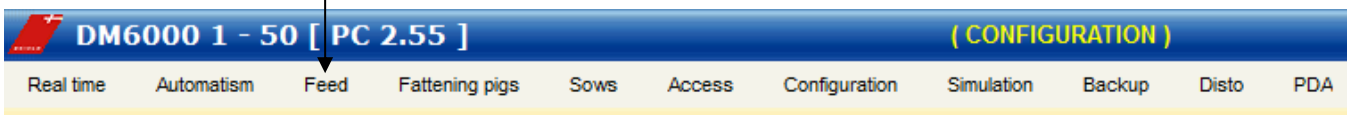
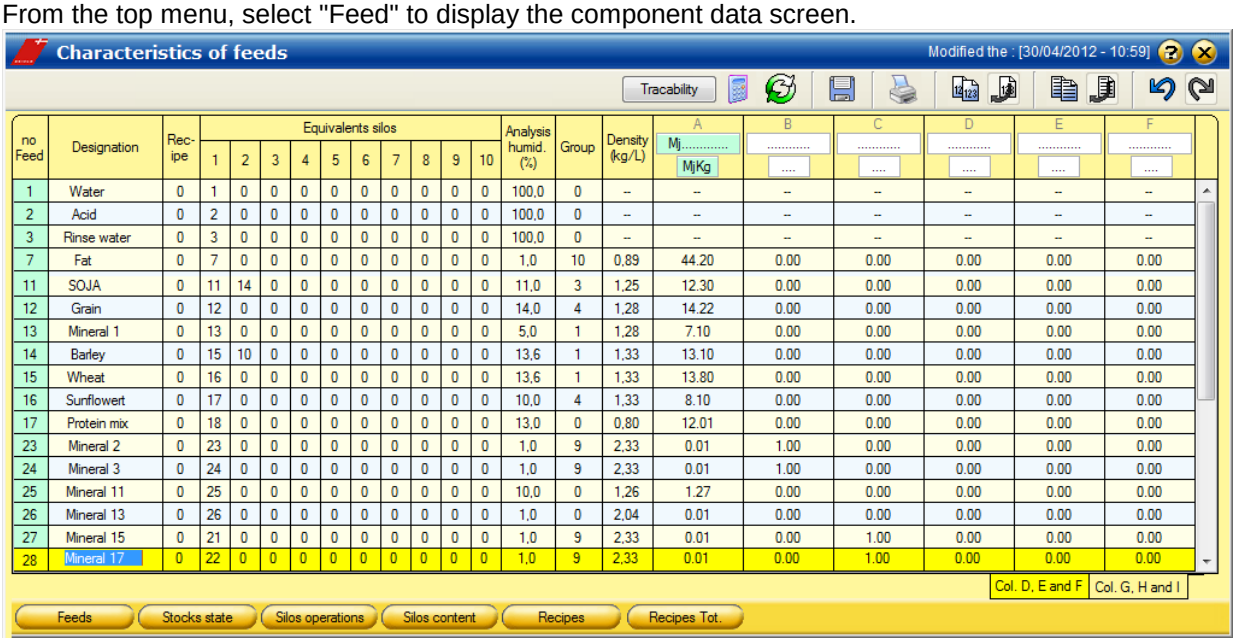
2. Feed

2.1 Component data entry

First, the components have to be set up in silos configured by Skiold A/S fitters.



From the top menu, select "Feed" to display the component data screen.



no Feed	Designation	Rec-ipe	Equivalents silos 1	2	3	4	5	6	7	8	9	10	Analysis humid. (%)	Group	Density (kg/L)	A Mj / MjKg	B	C	D	E	F
1	Water	0	1	0	0	0	0	0	0	0	0	0	100,0	0	--	--	--	--	--	--	--
2	Acid	0	2	0	0	0	0	0	0	0	0	0	100,0	0	--	--	--	--	--	--	--
3	Rinse water	0	3	0	0	0	0	0	0	0	0	0	100,0	0	--	--	--	--	--	--	--
7	Fat	0	7	0	0	0	0	0	0	0	0	0	1,0	10	0,89	44.20	0.00	0.00	0.00	0.00	0.00
11	SOJA	0	11	14	0	0	0	0	0	0	0	0	11,0	3	1,25	12.30	0.00	0.00	0.00	0.00	0.00
12	Grain	0	12	0	0	0	0	0	0	0	0	0	14,0	4	1,28	14.22	0.00	0.00	0.00	0.00	0.00
13	Mineral 1	0	13	0	0	0	0	0	0	0	0	0	5,0	1	1,28	7.10	0.00	0.00	0.00	0.00	0.00
14	Barley	0	15	10	0	0	0	0	0	0	0	0	13,6	1	1,33	13.10	0.00	0.00	0.00	0.00	0.00
15	Wheat	0	16	0	0	0	0	0	0	0	0	0	13,6	1	1,33	13.80	0.00	0.00	0.00	0.00	0.00
16	Sunflowert	0	17	0	0	0	0	0	0	0	0	0	10,0	4	1,33	8.10	0.00	0.00	0.00	0.00	0.00
17	Protein mix	0	18	0	0	0	0	0	0	0	0	0	13,0	0	0,80	12.01	0.00	0.00	0.00	0.00	0.00
23	Mineral 2	0	23	0	0	0	0	0	0	0	0	0	1,0	9	2,33	0.01	1.00	0.00	0.00	0.00	0.00
24	Mineral 3	0	24	0	0	0	0	0	0	0	0	0	1,0	9	2,33	0.01	1.00	0.00	0.00	0.00	0.00
25	Mineral 11	0	25	0	0	0	0	0	0	0	0	0	10,0	0	1,26	1.27	0.00	0.00	0.00	0.00	0.00
26	Mineral 13	0	26	0	0	0	0	0	0	0	0	0	1,0	0	2,04	0.01	0.00	0.00	0.00	0.00	0.00
27	Mineral 15	0	21	0	0	0	0	0	0	0	0	0	1,0	9	2,33	0.01	0.00	1.00	0.00	0.00	0.00
28	Mineral 17	0	22	0	0	0	0	0	0	0	0	0	1,0	9	2,33	0.01	0.00	1.00	0.00	0.00	0.00

This example shows both water components and dry components. The component is created with a name, specifying the silos, in which the component can be found, as well as the current moisture content and the relevant energy content for the dry components.

Important data for each component:
Designation of the component
The silos in which the component is located.
Group = which components are to be compensated with one another
Analysis humid. % = Water content in the component
Kg/L = very important, particularly if a No-Residue unit type is used.
MjKg = energy per kg of feed – specified at the moisture entered in the row.

The nutrient content of the individual components, such as phosphorus, raw protein, etc. can be entered in the columns "B" to "I" on the right.

If you have the same component in several silos, this must be done as shown on row 11 here with soya, where both silo 11 and silo 14 are entered under A and B. This means that product is being taken from silo 11 at present, and when this is empty it will be taken from silo 14 instead. When this switch takes place, the two silos will also swap places; so silo 14 will then appear under A and 11 under B. Up to 10 silos can be created for a component.

Remember in the case of minerals that you must always enter a value for MjKg. A value must always be entered even if they do not contain any energy; see the example in row 28.

Then click on "Silo operations" at the bottom of the screen.

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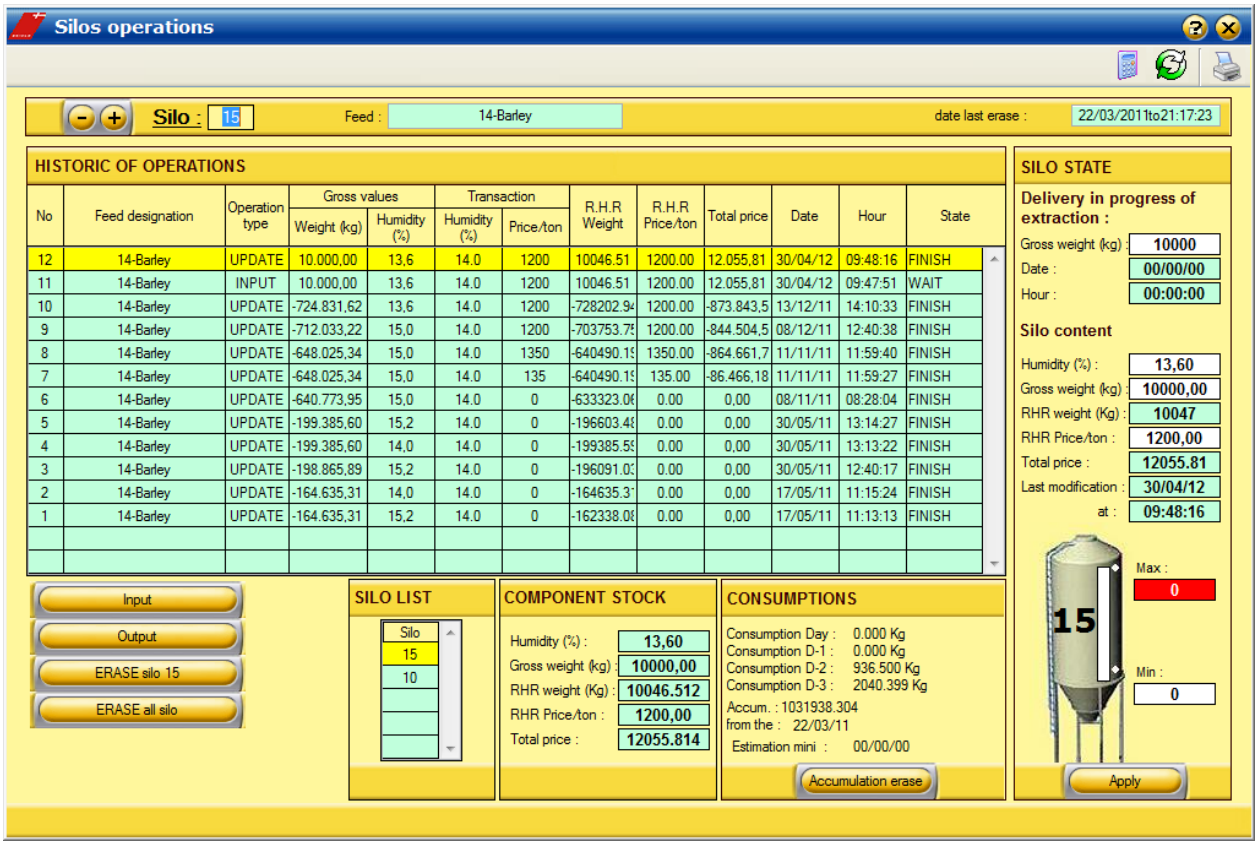
2.2 Silo deliveries and contents

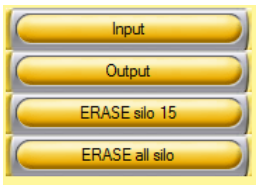

Silos operations
Silo : 15
Feed : 14-Barley
date last erase : 22/03/2011to21:17:23
HISTORIC OF OPERATIONS
No | Feed designation | Operation type | Gross values: Weight (kg) | Gross values: Humidity (%) | Transaction: Humidity (%) | Transaction: Price/ton | R.H.R Weight | R.H.R Price/ton | Total price | Date | Hour | State
12 | 14-Barley | UPDATE | 10.000,00 | 13,6 | 14.0 | 1200 | 10046.51 | 1200.00 | 12.055,81 | 30/04/12 | 09:48:16 | FINISH
11 | 14-Barley | INPUT | 10.000,00 | 13,6 | 14.0 | 1200 | 10046.51 | 1200.00 | 12.055,81 | 30/04/12 | 09:47:51 | WAIT
10 | 14-Barley | UPDATE | -724.831,62 | 13,6 | 14.0 | 1200 | -728202.94 | 1200.00 | -873.843,5 | 13/12/11 | 14:10:33 | FINISH
9 | 14-Barley | UPDATE | -712.033,22 | 15,0 | 14.0 | 1200 | -703753.75 | 1200.00 | -844.504,5 | 08/12/11 | 12:40:38 | FINISH
8 | 14-Barley | UPDATE | -648.025,34 | 15,0 | 14.0 | 1350 | -640490.19 | 1350.00 | -864.661,7 | 11/11/11 | 11:59:40 | FINISH
7 | 14-Barley | UPDATE | -648.025,34 | 15,0 | 14.0 | 135 | -640490.19 | 135.00 | -86.466,18 | 11/11/11 | 11:59:27 | FINISH
6 | 14-Barley | UPDATE | -640.773,95 | 15,0 | 14.0 | 0 | -633323.06 | 0.00 | 0,00 | 08/11/11 | 08:28:04 | FINISH
5 | 14-Barley | UPDATE | -199.385,60 | 15,2 | 14.0 | 0 | -196603.48 | 0.00 | 0,00 | 30/05/11 | 13:14:27 | FINISH
4 | 14-Barley | UPDATE | -199.385,60 | 14,0 | 14.0 | 0 | -199385.59 | 0.00 | 0,00 | 30/05/11 | 13:13:22 | FINISH
3 | 14-Barley | UPDATE | -198.865,89 | 15,2 | 14.0 | 0 | -196091.03 | 0.00 | 0,00 | 30/05/11 | 12:40:17 | FINISH
2 | 14-Barley | UPDATE | -164.635,31 | 14,0 | 14.0 | 0 | -164635.37 | 0.00 | 0,00 | 17/05/11 | 11:15:24 | FINISH
1 | 14-Barley | UPDATE | -164.635,31 | 15,2 | 14.0 | 0 | -162338.08 | 0.00 | 0,00 | 17/05/11 | 11:13:13 | FINISH
Input
Output
ERASE silo 15
ERASE all silo
SILO LIST
Silo
15
10
COMPONENT STOCK
Humidity (%) : 13,60
Gross weight (kg) : 10000,00
RHR weight (Kg) : 10046.512
RHR Price/ton : 1200,00
Total price : 12055.814
CONSUMPTIONS
Consumption Day : 0.000 Kg
Consumption D-1 : 0.000 Kg
Consumption D-2 : 936.500 Kg
Consumption D-3 : 2040.399 Kg
Accum. : 1031938.304
from the : 22/03/11
Estimation mini : 00/00/00
Accumulation erase
SILO STATE
Delivery in progress of extraction :
Gross weight (kg) : 10000
Date : 00/00/00
Hour : 00:00:00
Silo content
Humidity (%) : 13,60
Gross weight (kg) : 10000,00
RHR weight (Kg) : 10047
RHR Price/ton : 1200,00
Total price : 12055.81
Last modification : 30/04/12
at : 09:48:16
15
Max : 0
Min : 0
Apply

Deliveries are shown here for Silo 11, and in the large area of the screen you can see the deliveries input to DM6000 for this silo.
On the right side of the screen, you can see current data relating to silo contents and set the min. and max. values for the silo. You can also set the level and moisture content here: remember to click on "Apply" at the bottom of the header.
Note: The Min. limit will trigger a warning when the level falls below this figure.

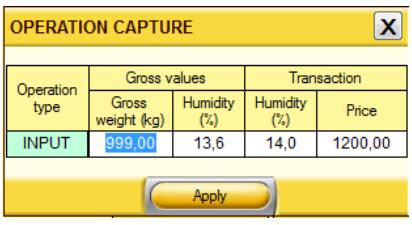
There are three headers at the bottom:

1. Silo list, where you can see which silos contain the same component.
2. Component stock, which just includes brief details on the component humidity % - Total amount of the component.
3. Consumptions, which shows the consumption pattern over the last few days, plus consumption since the last reset and the anticipated date on which this silo will be emptied, based on consumption over the last three days.

Deliveries to Silo.



When you click on "Input", the following screen is displayed.


OPERATION CAPTURE
Operation type | Gross values: Gross weight (kg) | Gross values: Humidity (%) | Transaction: Humidity (%) | Transaction: Price
INPUT | 999,00 | 13,6 | 14,0 | 1200,00
Apply

Data for the delivery Quantity and moisture content, and possibly also the price for the quantity
Click on "Apply".
Note that the moisture entered here is the moisture that will be used for feeding as this data is updated automatically throughout the entire system.

Similarly, you can click on "Output" to remove feed from a silo.
The "ERASE Silo x" button here deletes historical data for deliveries to the silo in question. Similarly, the "ERASE all silo" button deletes historical data for all silos.

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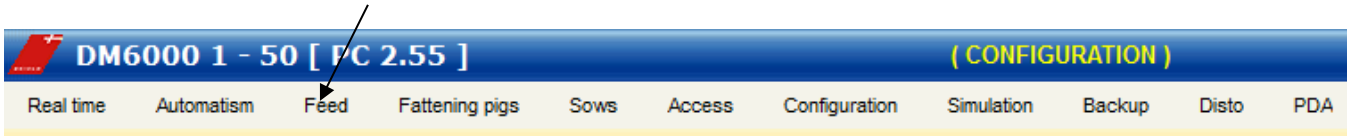
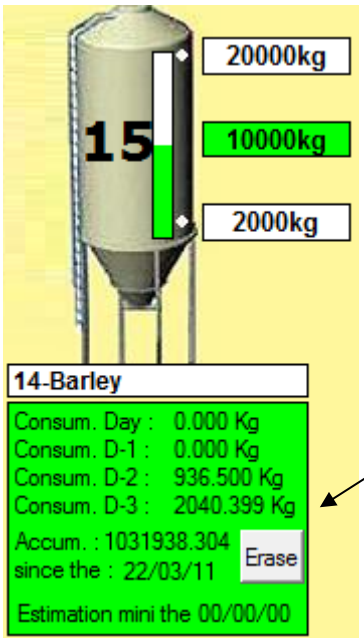
2.3 Reading and resetting silo consumption

Under Feed in the top menu



Silo contents at the bottom of the screen



This screen displays a graph showing the individual silos and indicating the size of the silo, the alarm limit of the silo and the current content of the silo.
The data field under the silo shows consumption from the silo for the last four days, as well as total consumption since the last reset. (You can reset this value by clicking on the grey button.)

There is also an anticipated date on which each silo will be empty. However, this is provided merely as a guide and is estimated on the basis of consumption over the last three days.

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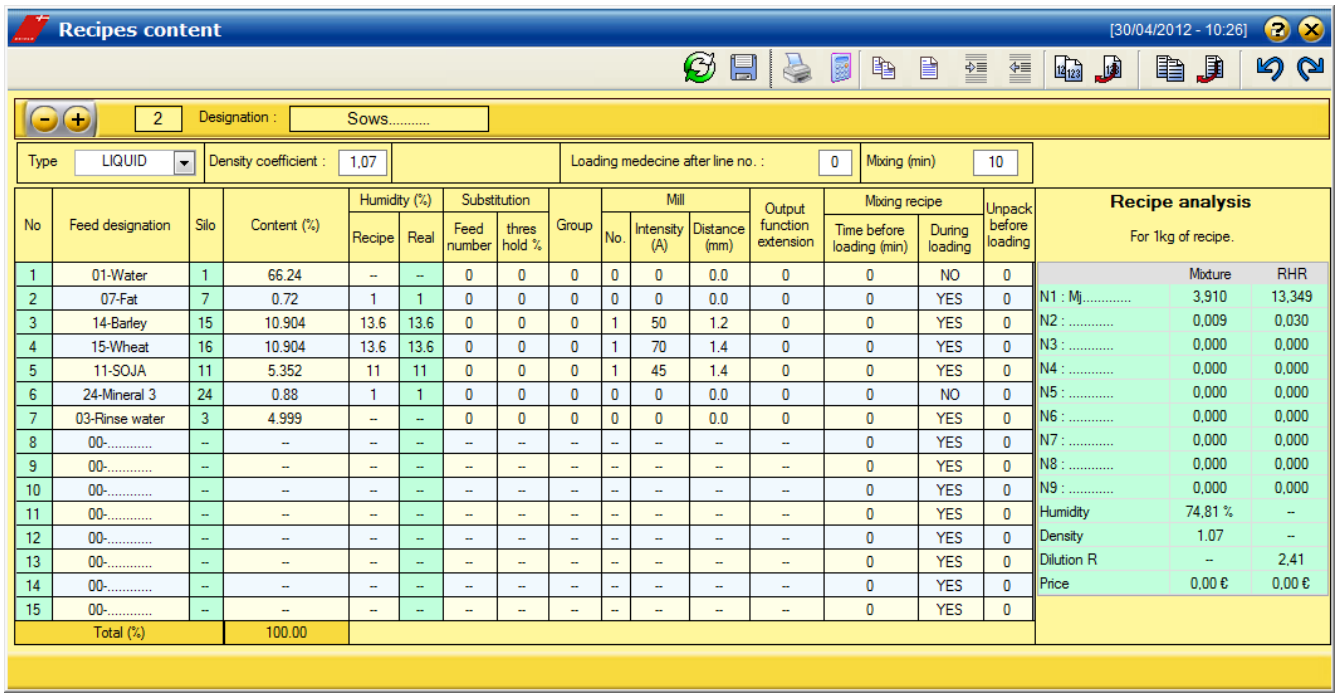
3. Recipe entry

To enter a recipe in the DM6000 controller, you have to select Feed from the top menu.

and then select Recipe at the bottom of the screen.

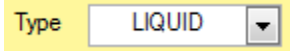
3.1 Recipe, single column



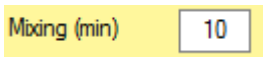
No	Feed designation	Silo	Content (%)	Humidity (%) Recipe	Humidity (%) Real	Substitution Feed number	Substitution thres hold %	Group	Mill No.	Mill Intensity (A)	Mill Distance (mm)	Output function extension	Mixing recipe Time before loading (min)	Mixing recipe During loading	Unpack before loading
1	01-Water	1	66.24	--	--	0	0	0	0	0	0.0	0	0	NO	0
2	07-Fat	7	0.72	1	1	0	0	0	0	0	0.0	0	0	YES	0
3	14-Barley	15	10.904	13.6	13.6	0	0	0	1	50	1.2	0	0	YES	0
4	15-Wheat	16	10.904	13.6	13.6	0	0	0	1	70	1.4	0	0	YES	0
5	11-SOJA	11	5.352	11	11	0	0	0	1	45	1.4	0	0	YES	0
6	24-Mineral 3	24	0.88	1	1	0	0	0	0	0	0.0	0	0	NO	0
7	03-Rinse water	3	4.999	--	--	0	0	0	0	0	0.0	0	0	YES	0
8	00-.....	--	--	--	--	--	--	--	--	--	--	--	0	YES	0
9	00-.....	--	--	--	--	--	--	--	--	--	--	--	0	YES	0
10	00-.....	--	--	--	--	--	--	--	--	--	--	--	0	YES	0
11	00-.....	--	--	--	--	--	--	--	--	--	--	--	0	YES	0
12	00-.....	--	--	--	--	--	--	--	--	--	--	--	0	YES	0
13	00-.....	--	--	--	--	--	--	--	--	--	--	--	0	YES	0
14	00-.....	--	--	--	--	--	--	--	--	--	--	--	0	YES	0
15	00-.....	--	--	--	--	--	--	--	--	--	--	--	0	YES	0
Total (%)			100.00												

A descriptive name for the recipe is entered at the top of the screen. In this example, "Sows" has been entered.

You then select in the Type field whether the recipe is for a dry feed or a liquid feed.



Mixing time once feed components have been added (before feeding commences).
Make sure the time is correct – meal feed / pellets



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Which components are to be used and the sequence in which they are to be weighed are the input.

No	Feed designation	Silo	Content (%)	Humidity (%)		Substitution		Group	Mill			Output function extension	Mixing recipe		Unpack before loading
				Recipe	Real	Feed number	thres hold %		No.	Intensity (A)	Distance (mm)		Time before loading (min)	During loading	
1	01-Water	1	66.25	--	--	0	0	0	0	0	0.0	0	0	NO	0
2	07-Fat	7	0.72	1	1	0	0	0	0	0	0.0	0	0	YES	0
3	14-Barley	15	10.9	13.6	13.6	0	0	0	1	50	1.2	0	0	YES	0
4	15-Wheat	16	10.9	13.6	13.6	0	0	0	1	70	1.4	0	0	YES	0
5	11-SOJA	11	5.35	11	11	0	0	0	1	45	1.4	0	0	YES	0
6	24-Mineral 3	24	0.88	1	1	0	0	0	0	0	0.0	0	0	NO	0
7	03-Rinse water	3	5	--	--	0	0	0	0	0	0.0	0	0	YES	0
8	00-.....	--	--	--	--	--	--	--	--	--	--	--	0	YES	0
Total (%)			100.00												

The content / quantities of individual components are input as percentages so that the component total 100 %. Here, be very careful to ensure that the humidity content in the recipe and in the silo are very similar, otherwise the DM6000 will correct its weighing in relation to the humidity content. (See row 3: here, 0.07% less than the planned amount will be added in terms of quantity, but the amount will be correct in terms of energy).
Similarly, you have to input here which component could replace a component if a silo were to run empty.
In the next columns, you can set a grinding level for a disc mill if you have one fitted. Remember that you have to select the correct mill number for this function to work. You also have to state whether stirring is to take place before adding this component, and whether the agitator is to operate while this component is being added.

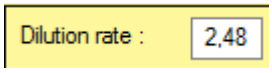
3.2 Recipe, 2 columns

Above, all components in the recipe were placed in a sequence; but it is also possible (Engineer setting) to use the recipes in such a way as to have all liquid components in one column and all dry/energy components in another.

No	Feed designation	Silo	Content (%)		Humidity (%)		Substitution		Group	Mill			Output function extension	Mixing recipe	
			Water	Flour	Recipe	Real	Feed number	thres hold %		No.	Intensity (A)	Distance (mm)		Time before loading (min)	During loading
1	01-Water	1	92.982	--	--	--	0	0	0	0	0	0.0	0	0	NO
2	07-Fat	7	--	2.504	1	1	0	0	0	0	0	0.0	0	0	YES
3	14-Barley	15	--	37.913	13.6	13.6	0	0	0	1	50	1.2	0	0	YES
4	15-Wheat	16	--	37.913	13.6	13.6	0	0	0	1	70	1.4	0	0	YES
5	11-SOJA	11	--	18.609	11	11	0	0	0	1	45	1.4	0	0	YES
6	24-Mineral 3	24	--	3.061	1	1	0	0	0	0	0	0.0	0	0	NO
7	03-Rinse water	3	7.018	--	--	--	0	0	0	0	0	0.0	0	0	YES
8	00-.....	--	--	--	--	--	--	--	--	--	--	--	--	0	YES

Shown here for a similar recipe.

When we use the 2 column system, additional data fields are provided which are very important;



namely the dilution rate, i.e. how many kg are to be weighed in from the Water column for every kg weighed in from the Flour column. In other words, it is possible to adjust the ratio of liquid to dry components without altering the actual recipe.
All liquid components must be without energy!!!!
All other fields are the same.

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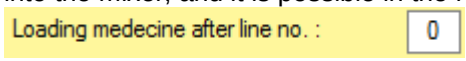
3.3 Addition of vitamins and similar

It is possible at valve level to assign vitamins and similar at valve or section level. This then has to be weighed into the mixer, and it is possible in the recipe to select the time at which this is to be weighed in



Weighed in according after line number in the recipe.

3.4 Results of the values input in the recipe

At the far right is the calculated result of the values input in the recipe.

Recipe analysis

For 1kg of recipe.

	Mixture	RHR
N1 : Mj.....	3,910	13,349
N2 :	0,009	0,030
N3 :	0,000	0,000
N4 :	0,000	0,000
N5 :	0,000	0,000
N6 :	0,000	0,000
N7 :	0,000	0,000
N8 :	0,000	0,000
N9 :	0,000	0,000
Humidity	74,81 %	--
Density	1.07	--
Dilution R	--	2,41
Price	0,00 €	0,00 €

This calculation uses data from the individual components in the Feed screen from earlier. The results are shown in two columns; firstly, showing what is in the mixture, and the second column converts this to dry feed at approx. 14 % humidity, i.e. with no water added.

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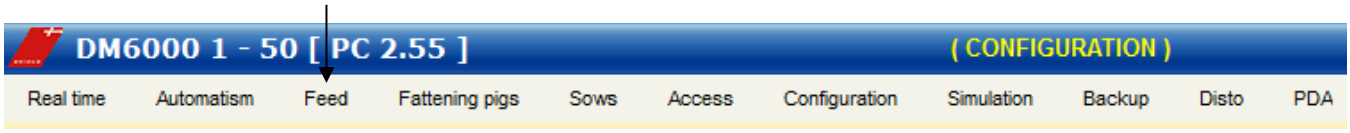
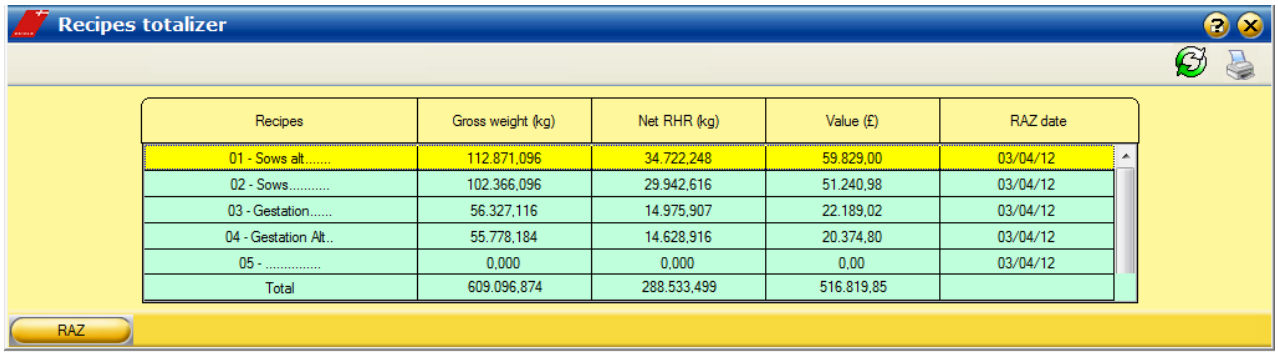
3.5 Recipe consumption

From the top menu, select Feed



Then from the bottom, select Recipes Tot.



This then shows the total consumption per recipe in the system (shown here for the first four recipes)
NB: Make sure here that all these values are updated during weighing, as due to residual quantities and compensation these are not necessarily the same values which can be read off under Technical results, where the data is updated every time a feed valve is closed.

It is also possible here to reset consumption for all recipes by clicking on the RAZ button, but it is better to click on the names of each individual recipe; this calls up a component consumption screen for the recipe in question.

This allows you to see exactly what has been weighed in, component by component, from the silos to produce this recipe since the last reset.
At the bottom, it is possible to reset this recipe to the current date. This is executed for all recipes in the same way.
If necessary, remember to print your data first.

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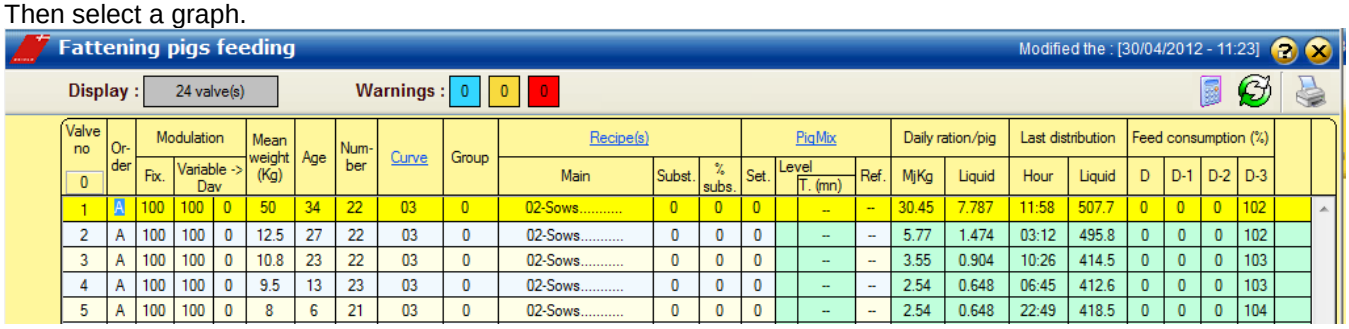
4. Inputting / amending feed graphs

4.1 Graph for Pigs

From the top menu, select Fattening pigs.

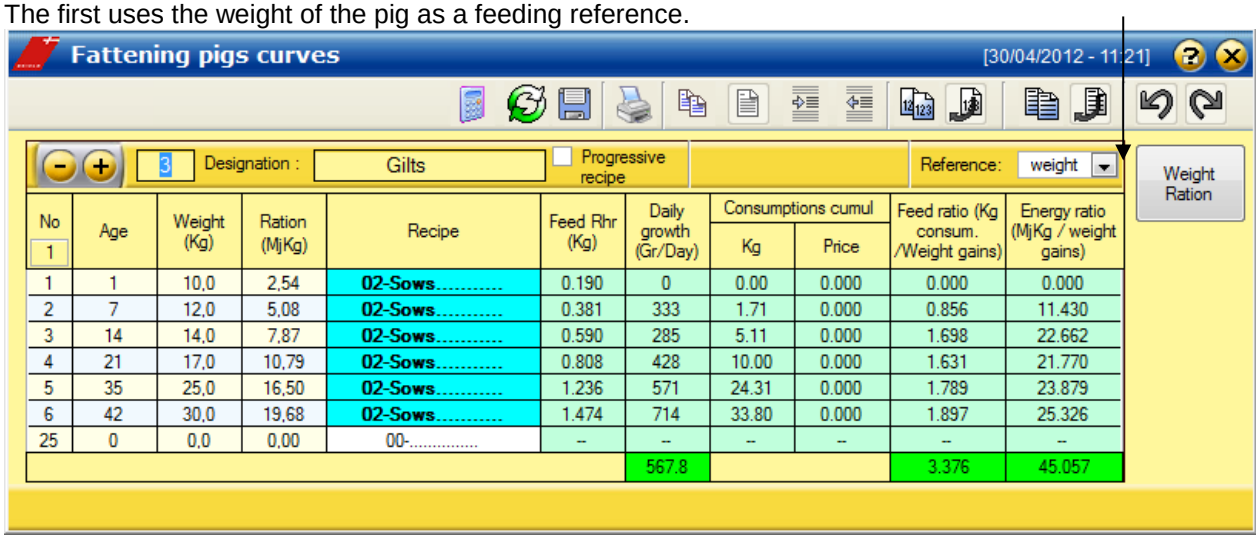
Then select a graph.



Valve no 0	Order	Modulation Fix.	Modulation Variable -> Dav		Mean weight (Kg)	Age	Number	Curve	Group	Recipe(s) Main	Recipe(s) Subst.	Recipe(s) % subs.	PigMix Set.	PigMix Level T. (mn)	PigMix Ref.	Daily ration/pig MjKg	Daily ration/pig Liquid	Last distribution Hour	Last distribution Liquid	Feed consumption (%) D	D-1	D-2	D-3
1	A	100	100	0	50	34	22	03	0	02-Sows.....	0	0	0	--	--	30.45	7.787	11:58	507.7	0	0	0	102
2	A	100	100	0	12.5	27	22	03	0	02-Sows.....	0	0	0	--	--	5.77	1.474	03:12	495.8	0	0	0	102
3	A	100	100	0	10.8	23	22	03	0	02-Sows.....	0	0	0	--	--	3.55	0.904	10:26	414.5	0	0	0	103
4	A	100	100	0	9.5	13	23	03	0	02-Sows.....	0	0	0	--	--	2.54	0.648	06:45	412.6	0	0	0	103
5	A	100	100	0	8	6	21	03	0	02-Sows.....	0	0	0	--	--	2.54	0.648	22:49	418.5	0	0	0	104

4.1.1 Weight controlled feed graph

There are two methods in the system for feeding "weaners", "finisher" and "young females".
The first uses the weight of the pig as a feeding reference.

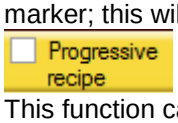


No 1	Age	Weight (Kg)	Ration (MjKg)	Recipe	Feed Rhr (Kg)	Daily growth (Gr/Day)	Consumptions cumul Kg	Consumptions cumul Price	Feed ratio (Kg consum. /Weight gains)	Energy ratio (MjKg / weight gains)
1	1	10,0	2,54	02-Sows.....	0.190	0	0.00	0.000	0.000	0.000
2	7	12,0	5,08	02-Sows.....	0.381	333	1.71	0.000	0.856	11.430
3	14	14,0	7,87	02-Sows.....	0.590	285	5.11	0.000	1.698	22.662
4	21	17,0	10,79	02-Sows.....	0.808	428	10.00	0.000	1.631	21.770
5	35	25,0	16,50	02-Sows.....	1.236	571	24.31	0.000	1.789	23.879
6	42	30,0	19,68	02-Sows.....	1.474	714	33.80	0.000	1.897	25.326
25	0	0,0	0,00	00-.....	--	--	--	--	--	--
						567.8			3.376	45.057

In the Age column, enter a day range which should be equivalent to the weight increase in the Weight column.
In the Ration column, enter the typical Mj quantity per day.
In the Recipe column, enter the recipe to be used for the individual weight stages as the pigs grow.

> At the end of each day, the DM6000 checks the pig weight for the individual valves, adds this figure to the estimated daily growth graph, and then when feeding the DM6000 checks the weight for the individual valves, creates a lookup in the feed graph and checks how much feed is to be given to each individual pig.

In systems where individual mixtures are defined for each valve, you can use several recipes and a function marker; this will provide an easy transition for the pigs from one feed type to the next.



This function can also be used with finishers, where there is one feeding time per section. That said, if there is one feeding time per recipe this should not be flagged in this.

The button at the far right can show weight gains and feed allocation in the form of a graph, so you can check your inputs graphically.

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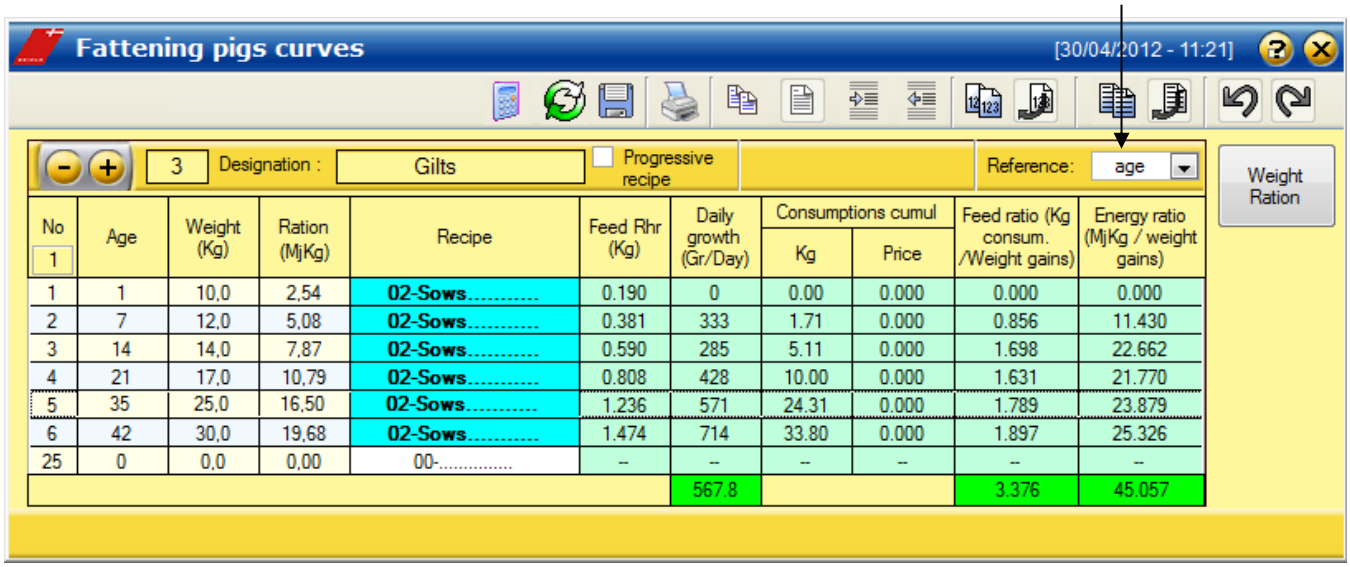
4.1.2 Age controlled feed graph

There are two methods in the system for feeding weaners, finishers and young females. The first uses the age of the pig as a feeding reference.

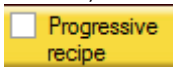


No 1	Age	Weight (Kg)	Ration (MjKg)	Recipe	Feed Rhr (Kg)	Daily growth (Gr/Day)	Consumptions cumul Kg	Consumptions cumul Price	Feed ratio (Kg consum. /Weight gains)	Energy ratio (MjKg / weight gains)
1	1	10,0	2,54	02-Sows.....	0.190	0	0.00	0.000	0.000	0.000
2	7	12,0	5,08	02-Sows.....	0.381	333	1.71	0.000	0.856	11.430
3	14	14,0	7,87	02-Sows.....	0.590	285	5.11	0.000	1.698	22.662
4	21	17,0	10,79	02-Sows.....	0.808	428	10.00	0.000	1.631	21.770
5	35	25,0	16,50	02-Sows.....	1.236	571	24.31	0.000	1.789	23.879
6	42	30,0	19,68	02-Sows.....	1.474	714	33.80	0.000	1.897	25.326
25	0	0,0	0,00	00-.....	--	--	--	--	--	--
						567.8			3.376	45.057

In the Age column, enter a day range which should be equivalent to the weight increase in the Weight column.
In the Ration column, enter the typical Mj quantity per day.
In the Recipe column, enter the recipe to be used for the individual age stages as the pigs grow.

> At the end of each day, the DM6000 checks the pen days for each individual valve, adds one day to this and checks the graph to see what weight the pigs should have achieved. Then it inputs this value to the valve.
> When feeding, the system checks on the valve to see what the pen days are set to. It then uses the pen days as a reference and checks in the graph to calculate which recipe and quantity are to be fed to each pig.

In systems where individual mixtures are defined for each valve, you can use several recipes and a function marker; this will provide an easy transition for the pigs from one feed type to the next.



This function can also be used with finishers, where there is one feeding time per section. That said, if there is one feeding time per recipe this should not be flagged in this.

The button at the far right can show weight gains and feed allocation in the form of a graph, so you can check your inputs graphically.

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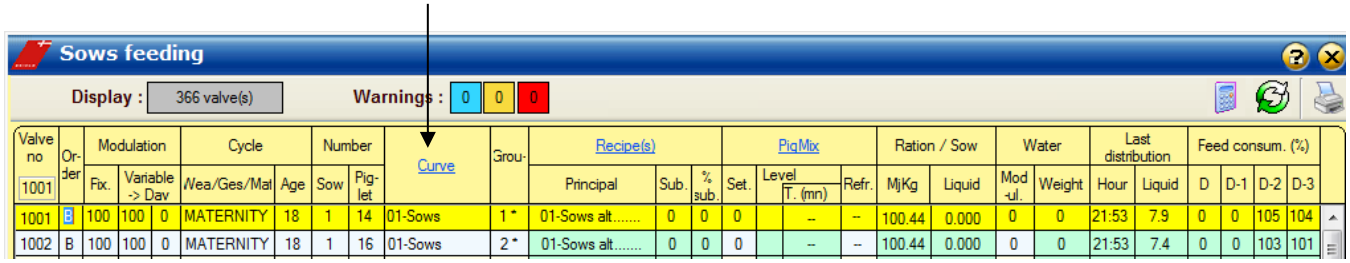
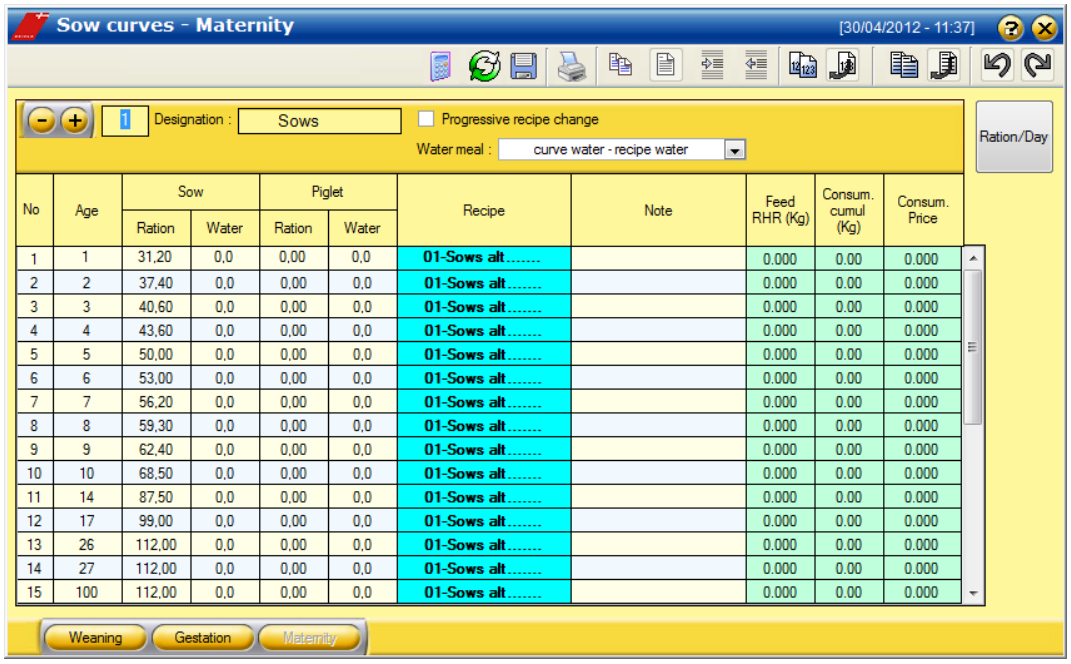
4.2 Graph for Sows

From the top menu, select Sows.

Click on Curve.





The feed graph for sows is divided into the three cycle periods for sows: "Weaning", "Gestation", and "Matemity" There is an independent graph for each of these periods, and in the valve screen you select the sow's current period.
Fields in the graph
Age is the current cycle day in the period, Ration is how much feed the sow should have on this cycle day, and the same for weaners.
The Water columns are used for separate water feeding (not implemented at present).
Recipe indicates the recipe with quantities which is to be fed, but this can be omitted if feeding is not taking place by sections.

Remember to compile all three subgraphs into a single sow graph.

Other fields have the same meanings as the pig graphs.

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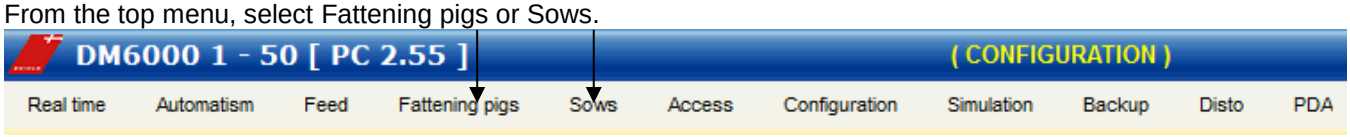
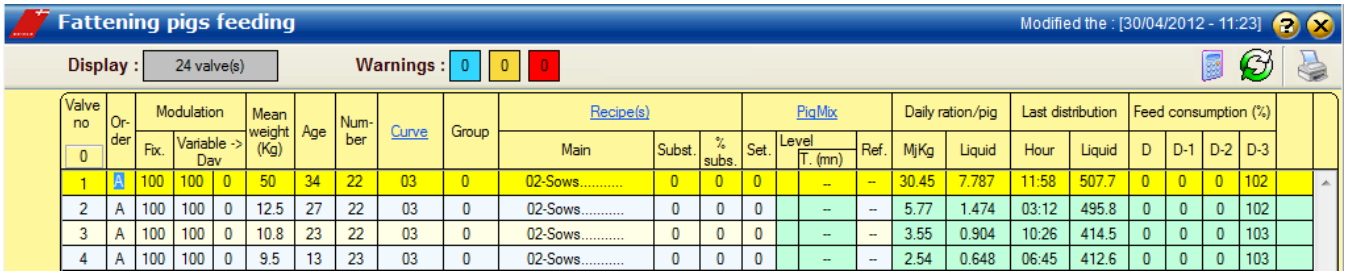
5. Inputting / amending valve data

From the top menu, select Fattening pigs or Sows.





Valve no	Order	Modulation Fix.	Modulation Variable -> Dav		Mean weight (Kg)	Age	Number	Curve	Group	Recipe(s) Main	Subst.	% subs.	PigMix Set.	Level T. (mn)		Ref.	Daily ration/pig MjKg	Liquid	Last distribution Hour	Liquid	Feed consumption (%) D	D-1	D-2	D-3
0																								
1	A	100	100	0	50	34	22	03	0	02-Sows.....	0	0	0		--	--	30.45	7.787	11:58	507.7	0	0	0	102
2	A	100	100	0	12.5	27	22	03	0	02-Sows.....	0	0	0		--	--	5.77	1.474	03:12	495.8	0	0	0	102
3	A	100	100	0	10.8	23	22	03	0	02-Sows.....	0	0	0		--	--	3.55	0.904	10:26	414.5	0	0	0	103
4	A	100	100	0	9.5	13	23	03	0	02-Sows.....	0	0	0		--	--	2.54	0.648	06:45	412.6	0	0	0	103

The first column is **Valve no**.

Order: Here, it is possible to group the individual sections in the stalls, e.g. Section 1 = A, etc. Valves which are not operations can be assigned the letter Z.

Modulation Fix.: a set deviation from the feed graph. For the valve to be calculated in accordance with the feed graph you have to input 100 %; and if you want to permanently reduce the feed quantity by 10 %, for example, you have to input 90 %.

Modulation variable dav.: as with deviation, 100 % = nominal graph value. If the feed quantity is to be reduced by 40 % over 4 days, for example, you have to type 60 % and 4 for the number of days. This means that the animals will only be fed 60 % of the graph value for the rest of today, tomorrow they will receive 70 % of the graph value, and in 4 days' time they will be back to 100 %.

For Pig valves

Mean weight (Kg)	Age	Num-ber

Weight: this is the current weight of the pigs. The weight is noted in accordance with the feed graph at the end of every day.

Number: the number of pigs at the valve.

Age: a figure indicating the number of pen days. This number increments by 1 at the end of every day.

For Sow valves

Cycle		Number	
Wea/Ges/Mat	Age	Sow	Pig-let

This indicates the sow's cycle period, as well as the cycle day she is at in the selected period.
It also shows the number of sows and any piglets at the valve.

Curve: The graph to be used to supply the valve with feed.

Group (Automatic recipe no.): must be different from 0. Typically figure = valve no. if individual feeding is taking place per valve, but a no. per section is used if feeding is taking place in sections.
Group (manual recipe no.): =0, no automatic calculation of recipe numbers (principal and auxiliary), these must be input manually.

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Recipe(s)		
Principal	Sub.	% sub.
01-Sows alt.....	0	0

Recept – Principal
This specifies or shows which recipe is being used for feeding.
Recept – Sub.
This shows which recipe you are up to when you are making an easy transition to the next recipe.
Recept - % Sub.
In the case of easy transitions, this shows the percentage being mixed in for the phase recipe.

PigMix set: if there is a sensor fitted in the trough, "1" or another no. (if there are several sensors set up) must be entered here. "0" must be entered for valves without sensors in the trough.

PigMix			
Set.	Level	T. (mn)	Ref.
0		--	--

PigMix – Level
This can accept a number of values.

- PM sensor is free; feed can be released to the valve.
- PM sensor is free, but feed is not released to the valve as not enough time has passed since the last feed, or else feed is on the way to the valve.
- , the PM sensor is covered again.
- , the PM sensor is covered again. No more feed will be release to the valve as the time passed since the last feed is not greater than the programmed min. time between feeds.
- , the PM sensor is covered again. The valve receives the refreshment quantity, i.e. the minimum amount for the trough. (only used for liquid feed, and not currently used by Skiold A/S)

PigMix – T.(Min)
Indicates the length of time since the sensor started to register Empty or Full.

PigMix – Ref.
The number of Refreshments (liquid feed is not currently used) back.

PigMix function

PigMix feeding (sensors) works as follows in the DM6000:

In the case of systems with individual mixing per valve (Multiphase dry and others), the sensor is tested immediately before mixing to the valve takes place, and if the sensor registers empty and the daily quantity or other restrictions are not exceeded, the feed is mixed and fed to the valve.

In the case of systems where feed is mixed for a group of valves simultaneously, an anticipated quantity is mixed for the group of valves and the valves are tested over a programmed adlib PigMix period. For valves which register empty and where the quantity has not been exceeded, feed is released at the programmed intervals.

> To be able to use PigMix feeding (sensors), sensors have to be fitted to the system and these have to be defined in the DM6000 controller. A Skiold A/S engineer must fit the sensors to the system and define the sensors in the DM6000 controller.

The remaining fields in the valve screens are calculated values.

Daily ration/pig		Last distribution		Feed consumption (%)			
MjKg	Liquid	Hour	Liquid	D	D-1	D-2	D-3
30.45	7.787	11:58	507.7	0	0	0	102

Daily ration per pig – energy respectively in the current mix and converted to dry feed.

Last distribution – the time and quantity of the last feed.

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Feed consumption (%) –

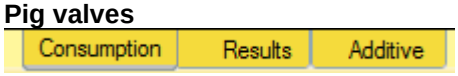
D = what percentage of the planned daily quantity has been fed today.
Dg-1 = what percentage of the planned daily quantity was fed yesterday.
Dg-2 = what percentage of the planned daily quantity was fed two days ago.
Dg-3 = what percentage of the planned daily quantity was fed three days ago.

Note that if the deviation and sick percentage is not 100, these percentages will also not equal approx. 100.

E.g. If deviation is set to 80, the valve has received the correct amount when consumption is set to 80.

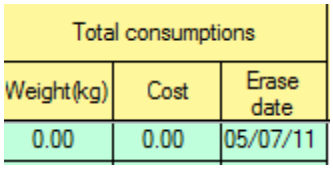
There is more data that can be displayed under these columns.

Pig valves



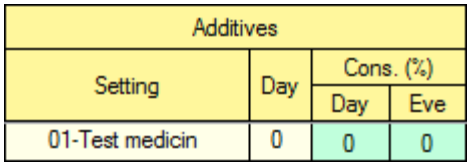
Consumption is the percentage described above.

Results



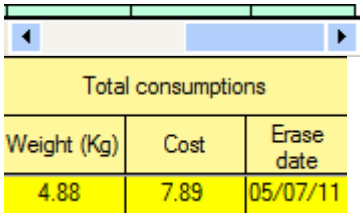
This shows the amount of feed released since the valve was reset.

Additives



Here, you can opt to add either vitamins or other components; for three days, in the case of this example.
Remember: this function has to be set. See the section on this.

Sow valves



This shows the amount of feed released since the valve was reset.

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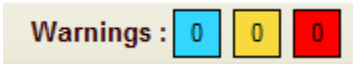
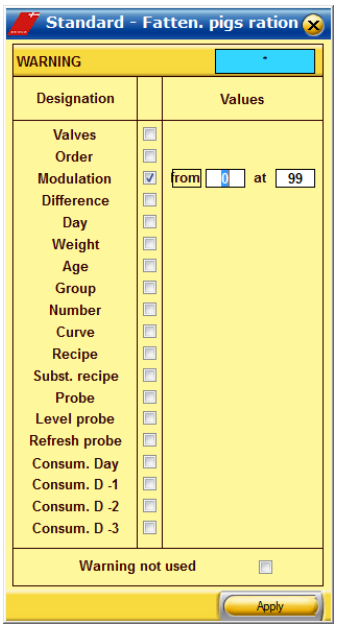
5.1 Valve highlight

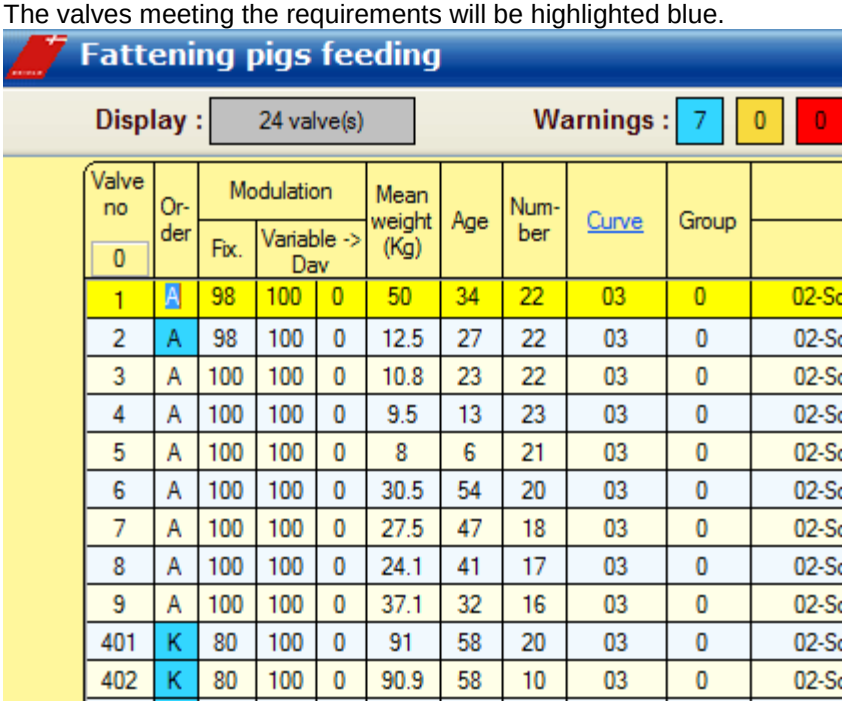
These symbols appear at the top of Fattening pigs feeding and Sow.



If, for example, you click on the blue box:



The valves meeting the requirements will be highlighted blue.



Valve no 0	Order	Modulation Fix.	Modulation Variable -> Dav		Mean weight (Kg)	Age	Number	Curve	Group	
1	A	98	100	0	50	34	22	03	0	02-Sc
2	A	98	100	0	12.5	27	22	03	0	02-Sc
3	A	100	100	0	10.8	23	22	03	0	02-Sc
4	A	100	100	0	9.5	13	23	03	0	02-Sc
5	A	100	100	0	8	6	21	03	0	02-Sc
6	A	100	100	0	30.5	54	20	03	0	02-Sc
7	A	100	100	0	27.5	47	18	03	0	02-Sc
8	A	100	100	0	24.1	41	17	03	0	02-Sc
9	A	100	100	0	37.1	32	16	03	0	02-Sc
401	K	80	100	0	91	58	20	03	0	02-Sc
402	K	80	100	0	90.9	58	10	03	0	02-Sc

In addition, the blue field at the top will indicate how many valves meet the requirement for blue highlighting. If you have also selected yellow and rest with other selection criteria and a valve meets several "colour criteria", yellow will be dominant over blue and red will be dominant over both yellow and blue.

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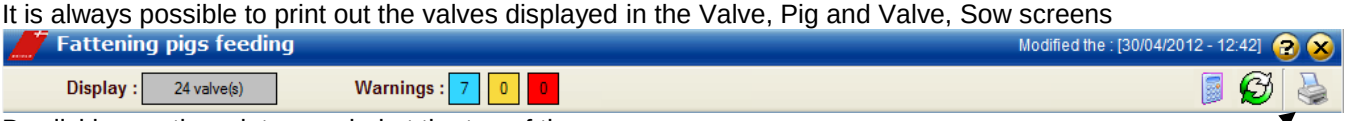
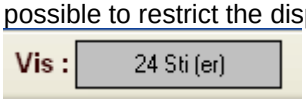
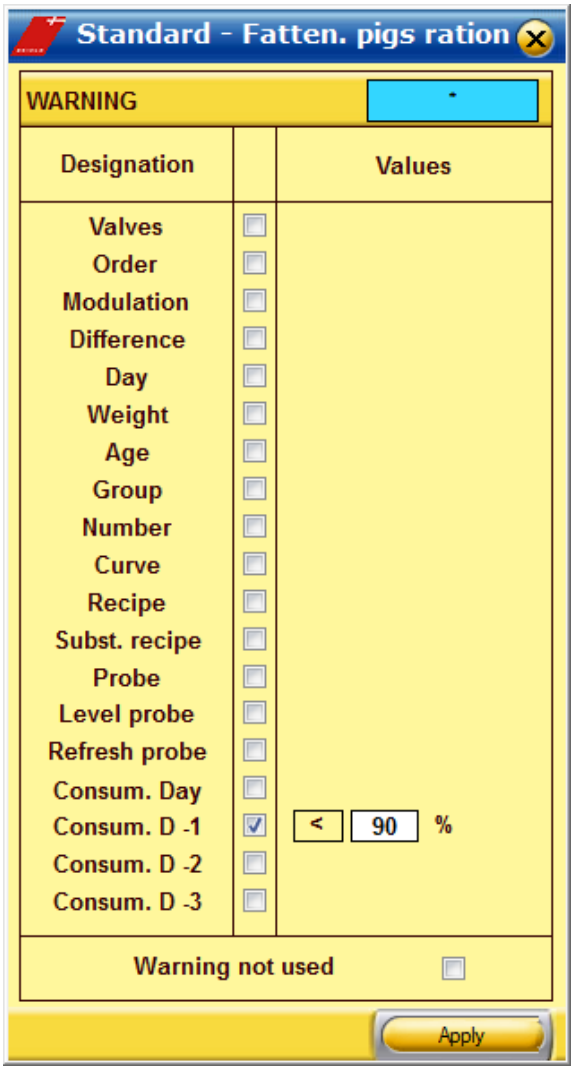
5.2 Valve printouts / Eating lists / Yield lists

It is always possible to print out the valves displayed in the Valve, Pig and Valve, Sow screens



By clicking on the printer symbol at the top of the screen.

It is also possible to restrict the display of valves if you click in this field 



In this screen, you can restrict which valves you want to view; as in this example, where it states that the user just wants to view the valves that have not fed enough in relation to the feed graph, e.g. used in a multiphase system, where feed is released according to a PigMix sensor in the automatic feeders.
Click on Apply at the bottom. The large valve screen will now be reduced and just show the valves which meet the requirements specified.

This reduced screen can then be printed out as a reduced valve list; an "Eating list" in this case or it may also be referred to as a "Yield list".

Remember to deselect this function again.

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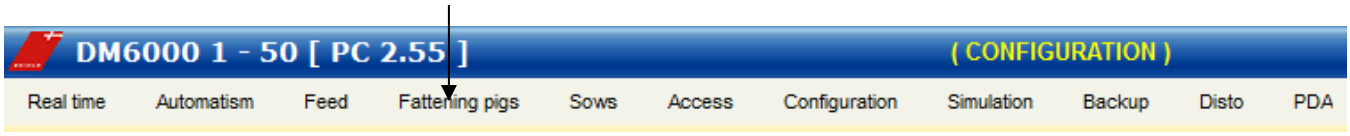
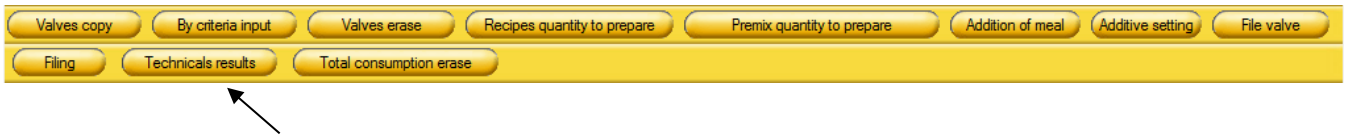
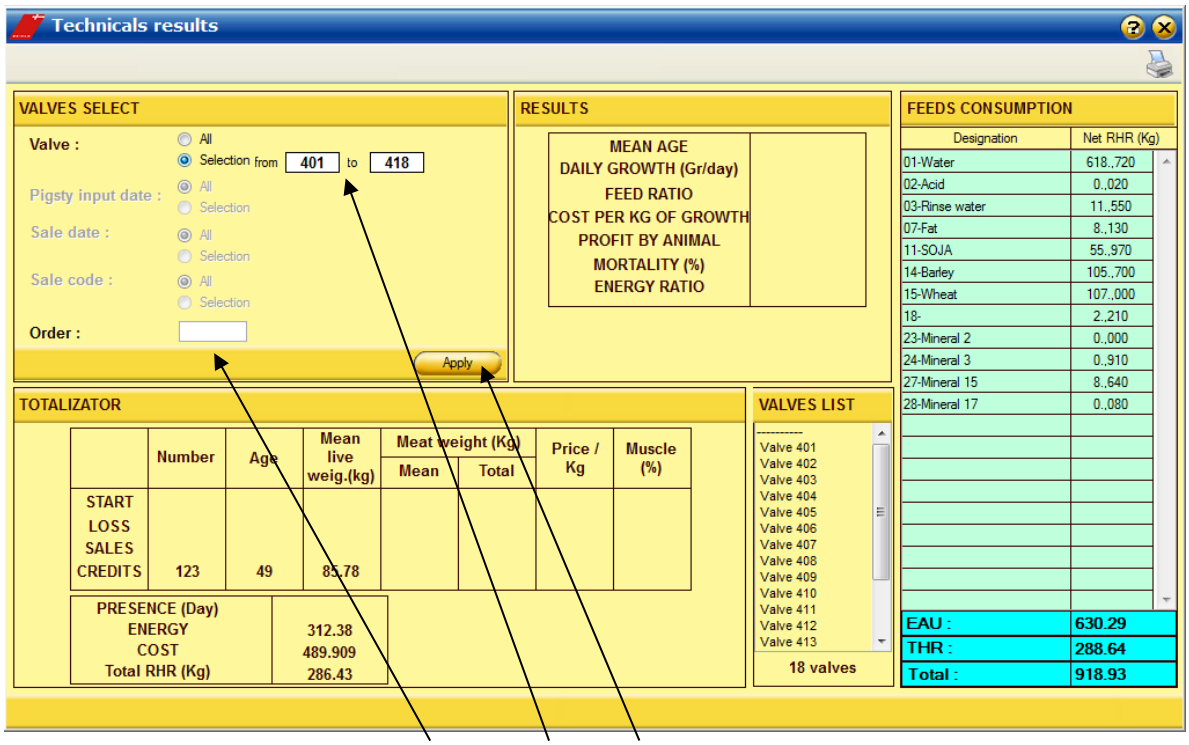
5.3 Reading of total consumption at feed valves



At the bottom of the valve summary, click on **Technicals results**.



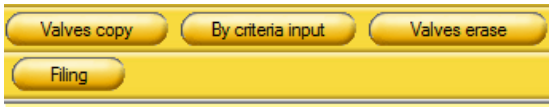


In the first part of the screen, you can choose the valves for which calculation is to take place, either in the format from valve – to valve, or as a sort group. After this, click on Apply.

The results can then be viewed on the right-hand side of the screen, along with consumption of the individual components. At the bottom of the screen, you can see how many pigs are on the selected valves at the moment.

Note: The same Technical results screen is also used to print data for the Sow valves.

5.4 Other valve screen functions



It is possible to copy valve data from one valve to another.
You can use "By criteria input", you can execute the same data correction for many valves.
Reset one or more valves.
Reset consumption information for one or more valves.

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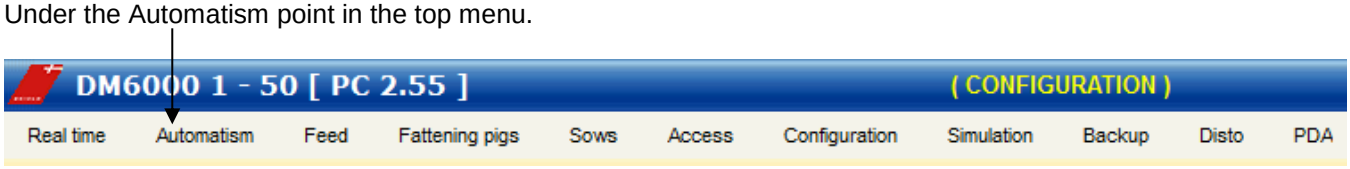
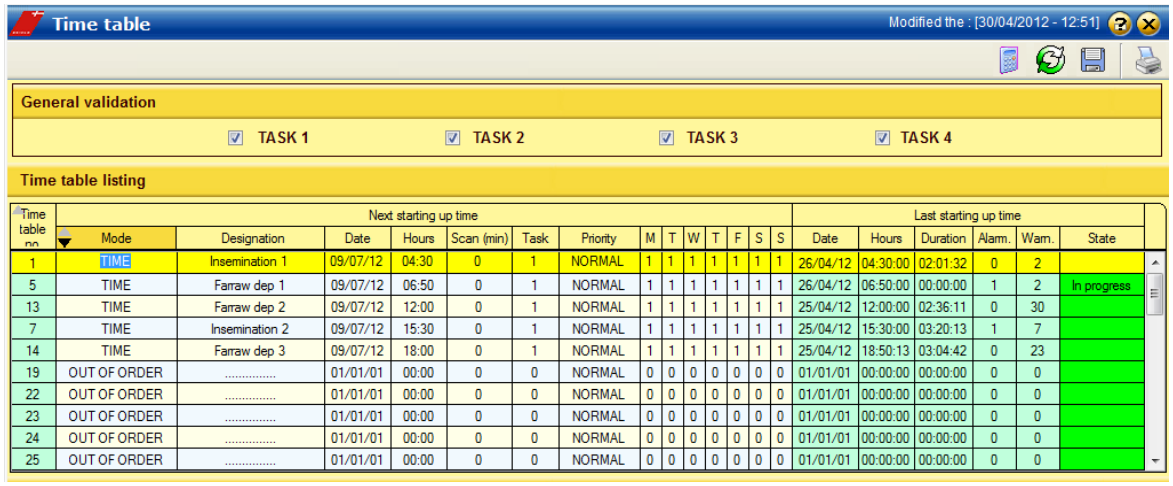
6. Setting up feeding times

Under the Automatism point in the top menu.





Time table no	Next starting up time: Mode	Designation	Date	Hours	Scan (min)	Task	Priority	M	T	W	T	F	S	S	Last starting up time: Date	Hours	Duration	Alarm.	Warn.	State
1	TIME	Insemination 1	09/07/12	04:30	0	1	NORMAL	1	1	1	1	1	1	1	26/04/12	04:30:00	02:01:32	0	2	
5	TIME	Farraw dep 1	09/07/12	06:50	0	1	NORMAL	1	1	1	1	1	1	1	26/04/12	06:50:00	00:00:00	1	2	In progress
13	TIME	Farraw dep 2	09/07/12	12:00	0	1	NORMAL	1	1	1	1	1	1	1	25/04/12	12:00:00	02:36:11	0	30	
7	TIME	Insemination 2	09/07/12	15:30	0	1	NORMAL	1	1	1	1	1	1	1	25/04/12	15:30:00	03:20:13	1	7	
14	TIME	Farraw dep 3	09/07/12	18:00	0	1	NORMAL	1	1	1	1	1	1	1	25/04/12	18:50:13	03:04:42	0	23	
19	OUT OF ORDER	.....	01/01/01	00:00	0	0	NORMAL	0	0	0	0	0	0	0	01/01/01	00:00:00	00:00:00	0	0	
22	OUT OF ORDER	.....	01/01/01	00:00	0	0	NORMAL	0	0	0	0	0	0	0	01/01/01	00:00:00	00:00:00	0	0	
23	OUT OF ORDER	.....	01/01/01	00:00	0	0	NORMAL	0	0	0	0	0	0	0	01/01/01	00:00:00	00:00:00	0	0	
24	OUT OF ORDER	.....	01/01/01	00:00	0	0	NORMAL	0	0	0	0	0	0	0	01/01/01	00:00:00	00:00:00	0	0	
25	OUT OF ORDER	.....	01/01/01	00:00	0	0	NORMAL	0	0	0	0	0	0	0	01/01/01	00:00:00	00:00:00	0	0	

Designation used to allocate a descriptive name to the feeds required.
The next two columns are used to set the date and time for the next feed.

1 should be entered in the TASK 1 column for mixer no. 1, and you also have to type 1 for the days for which feeding is required: see the example in the highlighted yellow row.
Finally, under Mode you should select "TIME".

Further information has to be set for each feeding time under Time table detail.

Time table detail num 1

Acti-vation	Seq.	Programmed recipe (A)	Executed recipe (B)	Group	First valve	Last valve	Order	Percentage: %	Percentage: consum.	Stop auto	Light (min)	Additive	Sequence table	Meal type	Water/ pig (kg)
☑	1	02-Sows.....	02-Sows.....	0	401	1380	K....	50	NO	NO	0	NO	03-RF Vo.clean	LIQUID	--
☑	2	01-Sows alt.....	01-Sows alt.....	0	401	1380	K....	50	NO	NO	0	NO	04-RF Normal	LIQUID	--

Recipe. This should show either the set recipe to be fed, or else recipe 0 should be set if you are using easy recipe transitions.

Group
0
0

Group. If you are feeding using set recipes, this should typically be set to 0. If you are feeding with easy recipe transitions such as multiphase dry or other, it should be 0, but if you are feeding liquid feed in sections with liquid recipe transitions, the section group no. should appear here.

First valve	Last valve
401	1380

The first and last valve no. in which you should search for valves meeting all other requirements.

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Order
K....

In the valve screens, it was possible to link a sort letter to each valve or section. This can also be used for feed selection.

Percentage	
%	consum.
50	NO

Feed distribution can be used in two ways

1. as here, 33 % of the daily ration and not totalled
2. in the case of PigMix or fast liquid feed metering, you can also typically set consum. to Yes. This means that the system can feed up to 33 % during this feed. You then have to remember to type 66 % and Yes for the next feed and then 100 % and Yes for the last feed.

Example for 5 feeds per day: Totalling Yes

- feed no. 1 -> percentage = 17% Yes
- feed no. 2 -> percentage = 39% Yes
- feed no. 3 -> percentage = 61% Yes
- feed no. 4 -> percentage = 83% Yes
- feed no. 5 -> percentage = 100% Yes

Example of 5 meals a day**: Totalling No**

- feed no. 1 -> percentage = 17% No
- feed no. 2 -> percentage = 22% No
- feed no. 3 -> percentage = 22% No
- feed no. 4 -> percentage = 22% No
- feed no. 5 -> percentage = 17% No

Stop auto
NO

Should feeding wait for the user, or should a button be pressed before feeding starts?

Light (min)
0

If a figure is entered here, this means that a light will come on in the stall when feed is released from the first valve, and it will go off again after the set number of minutes once feed is released from the last valve.

Additive
NO

See the section on additives.

Sequence table	Meal type
03-RF Vo.clean	LIQUID

What programme selection should be used for feeding?
Programme selections are defined by Skiold A/S engineers.

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7. Additives / Vitamins

7.1 Installation

A mini dispenser can be fitted to the system.

This equipment is installed and coded by a Skiold A/S fitter.

7.2 Use in recipes

The installed dispenser unit, together with component and silo data, can be used in recipes in the same way as all other feed components.

You then have to switch to an alternative curve containing alternative recipes which include this component.

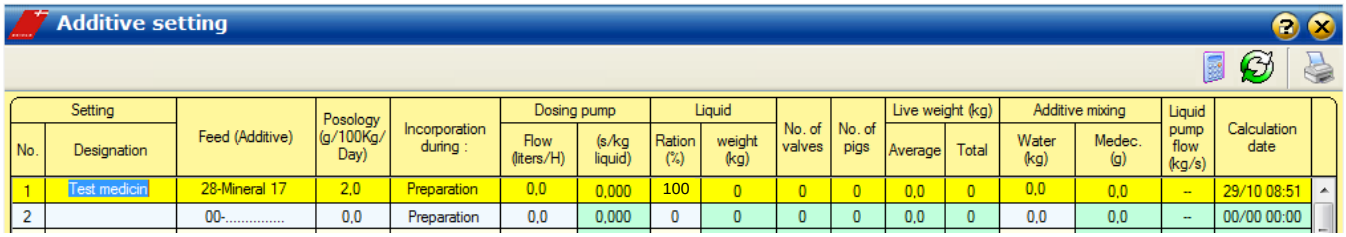
7.3 Use as valve addition

That said, it is also possible to add this component at valve level over a number of days.

7.3.1 Setup

Firstly, the component must be set up in Feed and similar in much the same way as the other components and it must also be set up technically together with a Skiold engineer.

Top menu **Fattening pigs**, **additive No.** button at the bottom.



Setting		Feed (Additive)	Posology (g/100Kg/ Day)	Incorporation during :	Dosing pump		Liquid		No. of valves	No. of pigs	Live weight (kg)		Additive mixing		Liquid pump flow (kg/s)	Calculation date
No.	Designation				Flow (liters/H)	(s/kg liquid)	Ration (%)	weight (kg)			Average	Total	Water (kg)	Medec. (g)		
1	Test medicin	28-Mineral 17	2,0	Preparation	0,0	0,000	100	0	0	0	0,0	0	0,0	0,0	--	29/10 08:51
2		00-.....	0,0	Preparation	0,0	0,000	0	0	0	0	0,0	0	0,0	0,0	--	00/00 00:00

For each additive model, a row must be created as shown here which includes the dispensing quantity per 100 kg of live weight at the valve in question.

You can create several rows with the same component but different dispensing per 100 kg of pig.

If Flow under Dosing pump is set to 0.0 as shown here, this means that weighing in will take place in accordance with the rules set up together with a Skiold engineer in respect of automatic or manual flow calculation, etc.

If the product to be weighed in as an additive is in extremely small quantities, you can input the quantity per hour here. This allows this flow rate to override the rate otherwise entered for the component.

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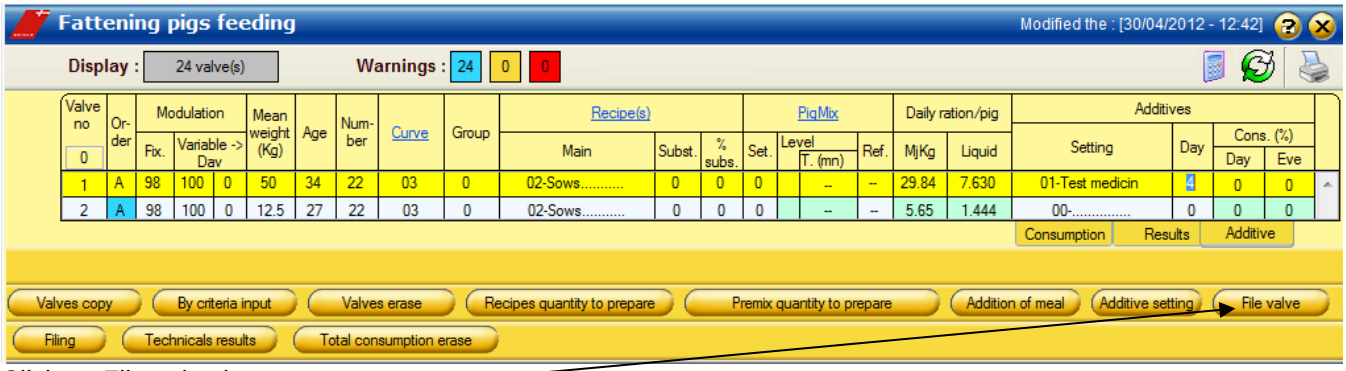
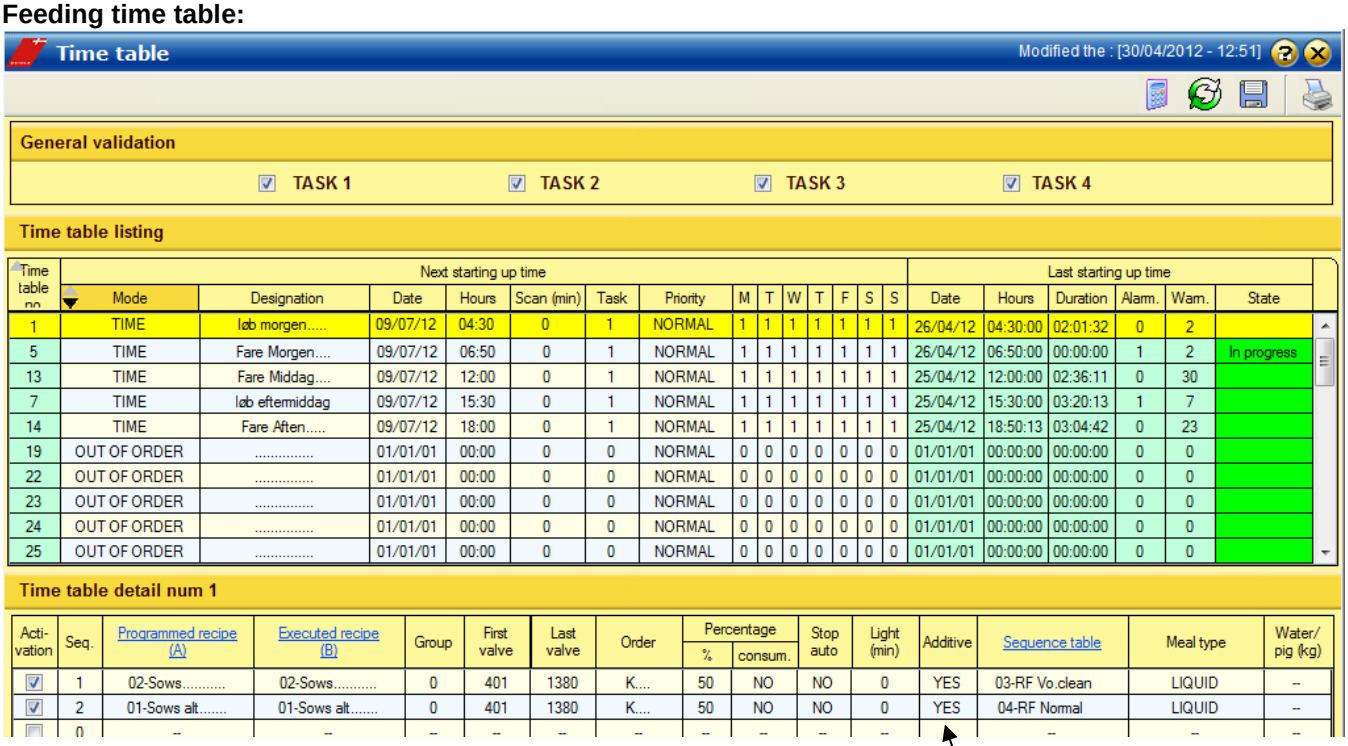
In the valve screen:



Click on File valve here.

For these valves where you want to add a component to the feed, select what is shown here for valve no. 1, stating how many days this component is to be given.

Feeding time table:



This should be set to YES for the feeding time where you want the component to be added.

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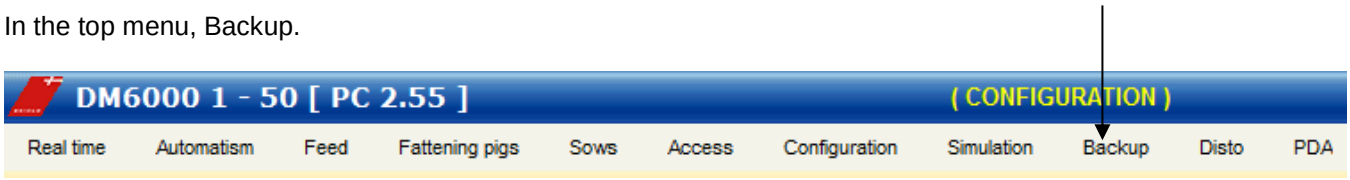
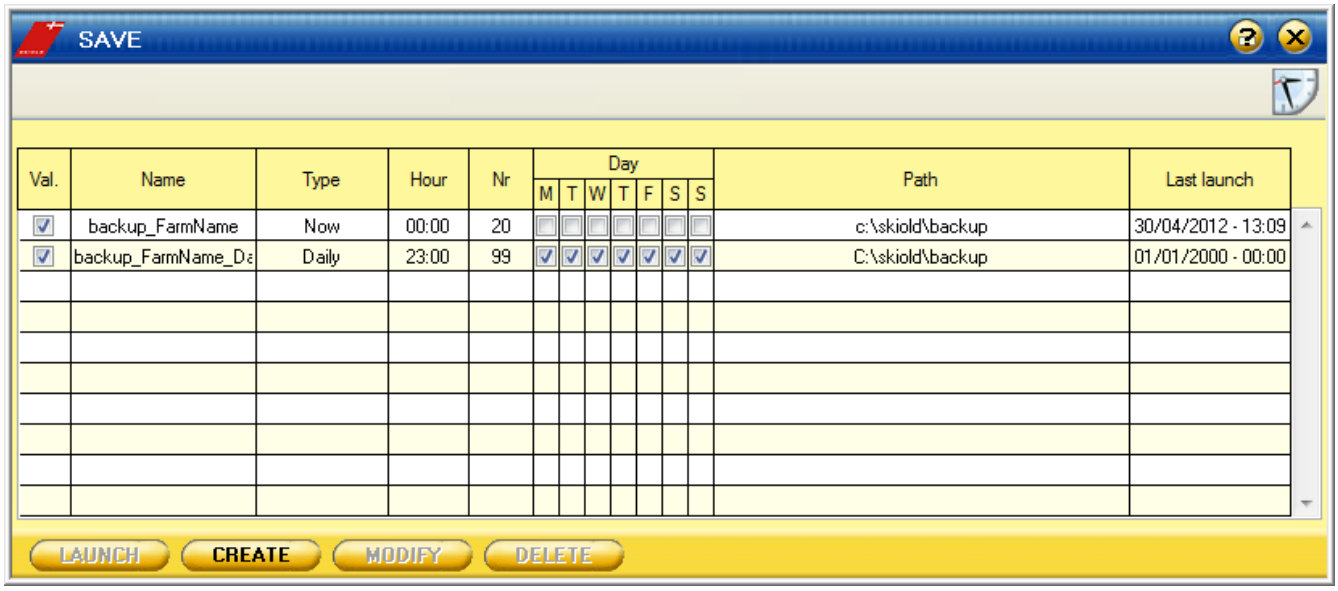
8. Backup copy of DM6000

In the top menu, Backup.

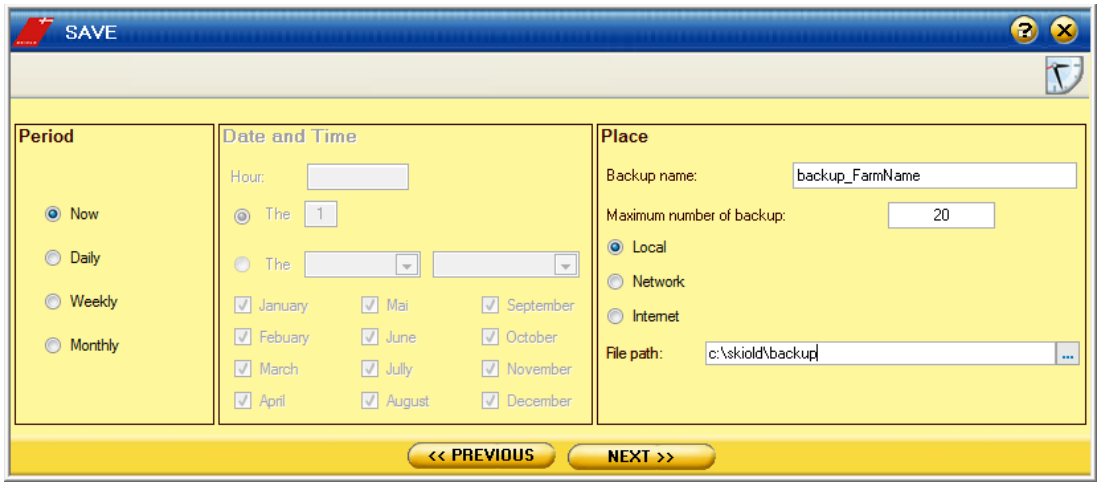




Typically, these will both be set up by an engineer. One will always make sure a backup of the system is made every evening, and the other one creates an additional copy before you have to correct all recipes or similar, for example.
Select and click on LAUNCH to start the backup immediately.
Note: Only the highlighted rows are active.

8.1 Create a backup sequence

Click on Create.



Enter the name of the backup and interval information, as well as stating where the backup is to be saved, then click on Next.

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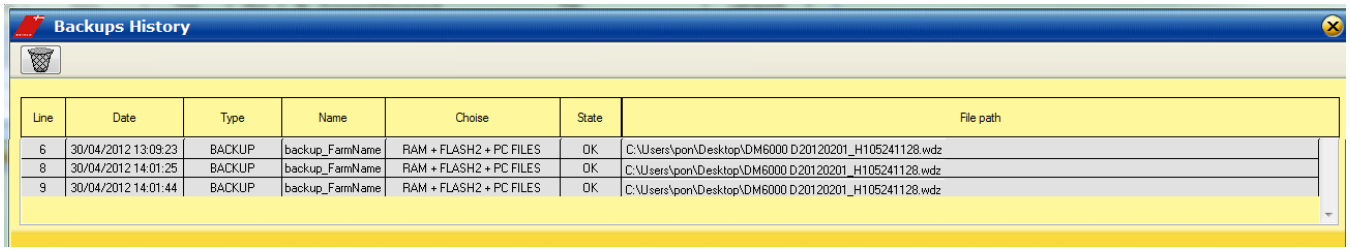
8.2 Backups History

This time symbol appears at the top of the backup screen. This opens the screen below, where you can check whether the daily backup is running and when the last backup was made.

Note: It is always the user's responsibility to make sure that backups are made.



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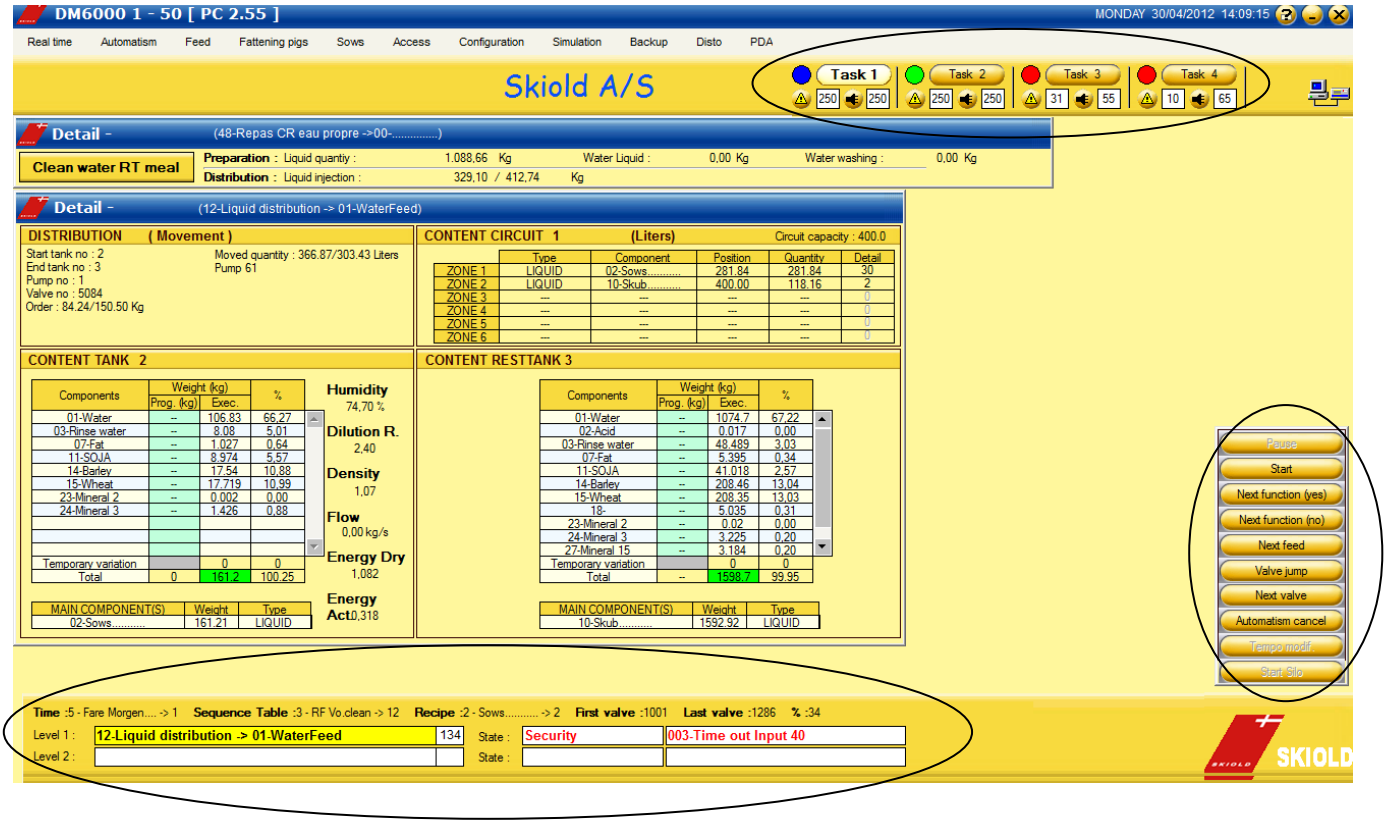
9. Activity screens and Alarm management



The actual activity screen may vary widely depending on what type of type system is in use and what activity is accessed, but one thing all activity screens have in common is that they contain three marked areas.

Pause is used to stop what is running.

Start makes it restart.

Next function – moves on to the next function to be executed (Yes / No) when testing a sensor, for example.

Next feed is used to continue after a run-on or empty silo

Valve jump or Next to start again during feeding.

Automatism cancel – if you simply want to leave the activity and move on to the next feeding time.

Tempo modif. – e.g. if you want to change the stirring time running.

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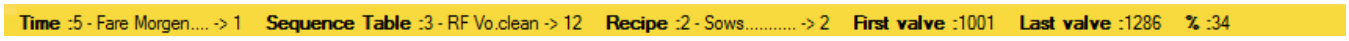
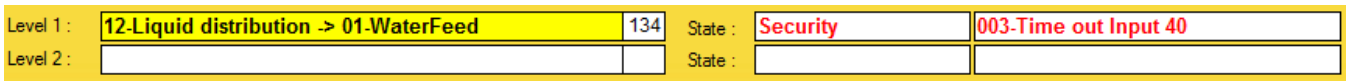


Basic information on what is currently running in the process displayed.



The programme type running is shown on the left.

If an alarm is triggered, this is shown in red on the right. Click on the alarm text for help with understanding the alarm. (See alarm explanations.) Remember the No. before the alarm text.

DM6000 can run four simultaneous tasks, known as processes.
The activity screen is displayed for the process indicated in bold type, **Task 1** here.

Constant green means that work is in progress and everything is OK. If a grey cross is flashing over the blue colour, this means that the process has been deselected and the process will stop feeding when the current operation is completed.

Red means that there is an alarm here at Task 3. If a grey cross is flashing over the blue colour, this means that the process has been deselected and the process will stop feeding when the current operation is completed.

Blue means that the user has opted to press the Pause button. If a grey cross is flashing over the blue colour, this means that the process has been deselected and the process will stop feeding when the current operation is completed.

Grey means that the process is not enabled.

Means that there have been 1 alarm and 5 warnings since these figures were last reset.

Click on the figure to reset it. This should be done by the same person and at about the same time every day as looking at these figures is the only way of knowing whether there is any reason to open the alarm list to see whether anything of interest has happened.

Click on the symbols to view alarms and warnings (see the History] list).

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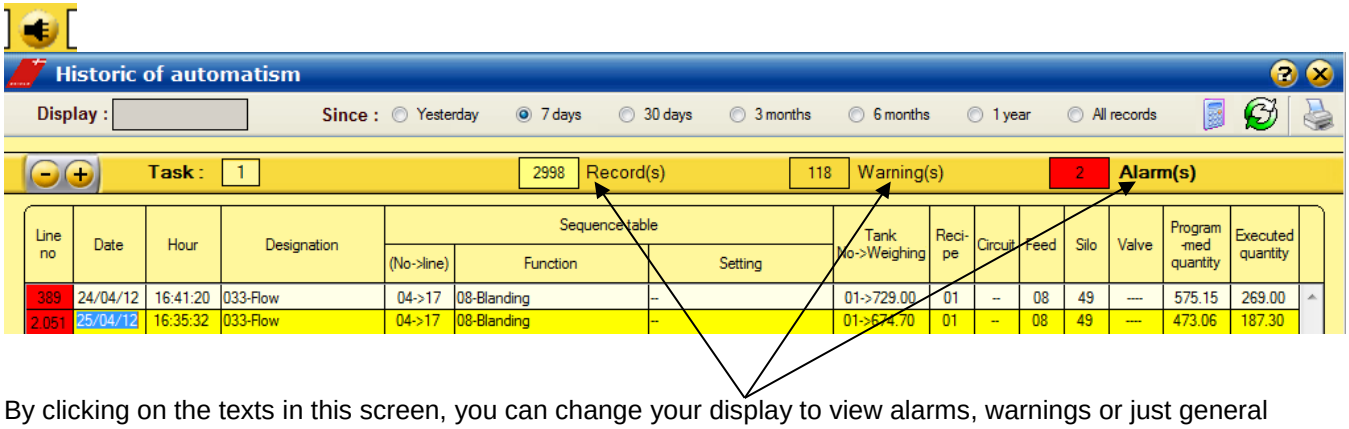
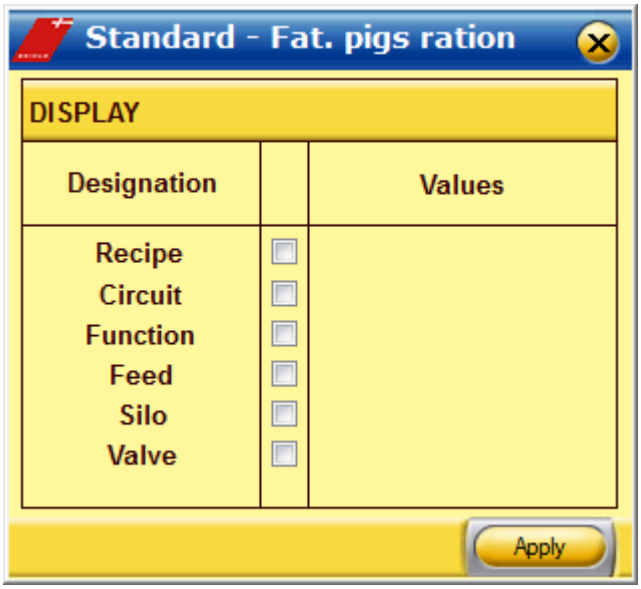
9.1 Historic list


Historic of automatism
Display :
Since : Yesterday 7 days 30 days 3 months 6 months 1 year All records
Task : 1
2998 Record(s)
118 Warning(s)
2 Alarm(s)
Line no | Date | Hour | Designation | Sequence table (No->line) | Function | Setting | Tank No->Weighing | Recipe | Circuit | Feed | Silo | Valve | Programmed quantity | Executed quantity
389 | 24/04/12 | 16:41:20 | 033-Flow | 04->17 | 08-Blanding | -- | 01->729.00 | 01 | -- | 08 | 49 | ---- | 575.15 | 269.00
2.051 | 25/04/12 | 16:35:32 | 033-Flow | 04->17 | 08-Blanding | -- | 01->674.70 | 01 | -- | 08 | 49 | ---- | 473.06 | 187.30

By clicking on the texts in this screen, you can change your display to view alarms, warnings or just general operation history.

At the top of the screen, you have the option of defining the period for which you want to view information if you click in the

Field.



If you have the option of creating a search for specific events in the alarm list, REMEMBER to deselect this again once you have found the item(s) of interest as these selection criteria will otherwise be applied the next time you open the alarm list.

Display field will be coloured green when selection criteria have been specified.

Clicking on the question mark at the top of the screen takes you to Alarm explanations.

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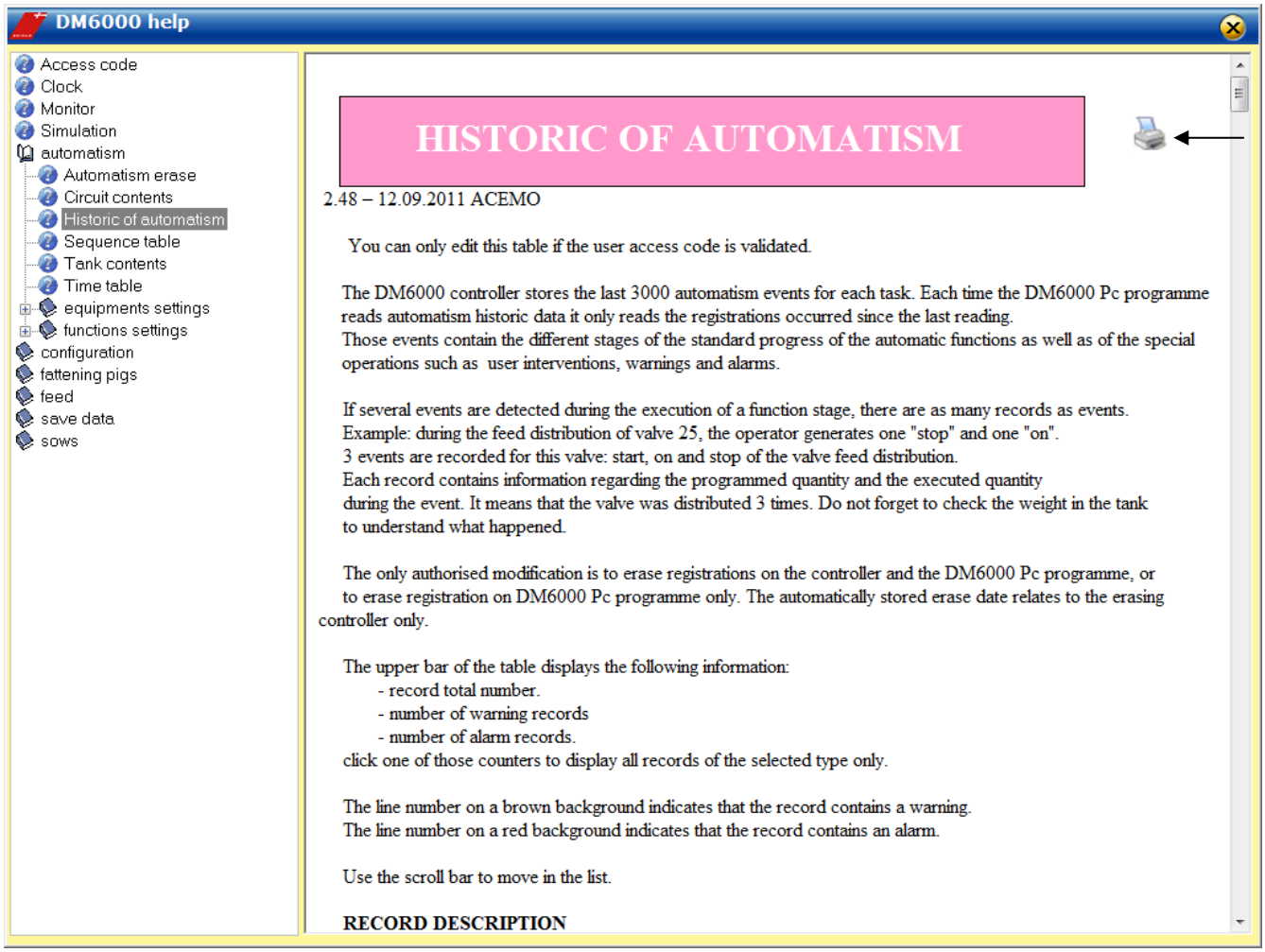
9.2 Alarm explanations


DM6000 help
Access code
Clock
Monitor
Simulation
automatism
Automatism erase
Circuit contents
Historic of automatism
Sequence table
Tank contents
Time table
equipments settings
functions settings
configuration
fattening pigs
feed
save data
sows
HISTORIC OF AUTOMATISM
2.48 – 12.09.2011 ACEMO
You can only edit this table if the user access code is validated.
The DM6000 controller stores the last 3000 automatism events for each task. Each time the DM6000 Pc programme reads automatism historic data it only reads the registrations occurred since the last reading.
Those events contain the different stages of the standard progress of the automatic functions as well as of the special operations such as user interventions, warnings and alarms.
If several events are detected during the execution of a function stage, there are as many records as events.
Example: during the feed distribution of valve 25, the operator generates one "stop" and one "on".
3 events are recorded for this valve: start, on and stop of the valve feed distribution.
Each record contains information regarding the programmed quantity and the executed quantity during the event. It means that the valve was distributed 3 times. Do not forget to check the weight in the tank to understand what happened.
The only authorised modification is to erase registrations on the controller and the DM6000 Pc programme, or to erase registration on DM6000 Pc programme only. The automatically stored erase date relates to the erasing controller only.
The upper bar of the table displays the following information:
- record total number.
- number of warning records
- number of alarm records.
click one of those counters to display all records of the selected type only.
The line number on a brown background indicates that the record contains a warning.
The line number on a red background indicates that the record contains an alarm.
Use the scroll bar to move in the list.
RECORD DESCRIPTION

This help page includes explanations of all alarms and warnings that can be output by the DM6000.

There is also a printer symbol in this screen which you can click on if you want a printout of all alarm options.

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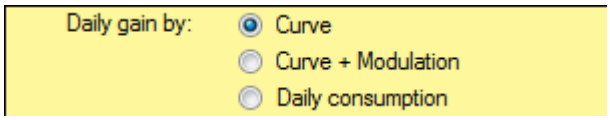
10. Default data settings

A few additional options are described briefly below, and these can only be changed by engineers.

10.1 Growth handling in curves

Growth in valves of pig type – valves 1 to 1000. Here, you can define in general terms how growth calculation is to take place at the end of a day. Please note that this decision affects all valves between 1 and 1000.



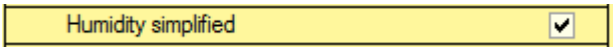
The default setting is as shown here: Curve determines growth; that is to say, every evening the weight on every valve assigns the growth defined in the graph.

Curve + Modulation. This is often also used in finisher herds because if you have set the valve to 80 %, only 80 % of the growth defined in the feed graph is assigned; the same is true if deviation is set to 120 %.

Daily consumption. (PigMix Adlib only) Used in some herds in connection with multiphase dry, where the amount of feed taken is a calculation parameter, it being understood that if the pigs have eaten 120 % at a valve in relation to what was expected, the valve will also be assigned a growth in which percentages are added to the curve growth in relation to the amount eaten.

10.2 Component moisture

A typical setting for a Skiold A/S DM6000 system involves working on the basis of the energy specifications in the individual components being reasonably static and not changing when new feed deliveries are reported.



However, it is possible to delete this check mark if you allow energy to be specified for a component at a given moisture level; at which point future feed deliveries with a different moisture level in the same component will be compensated for when being weighed in for a recipe so that the energy content and moisture percentage are maintained.

This alternative setting requires slightly more attention from the user as the system will be considerably more vulnerable to incorrect inputs.

10.3 Delay for start time

In practice, Max delay for start time means that if the system has fallen behind the schedule which it normally uses for feeding; and so if an alarm has been triggered in the system for 24 hours, it can remember how far back it has to start to feed in order to catch up with what it has missed.

A typical setting is